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# The Plant of the Minnesota Steel Co. at Duluth

## *General Arrangement of the Works Which Will Include Two Blast Furnaces, Open-Hearth Department, Blooming, Rail and Merchant Mills*

Considerable progress has been made on the new plant, which the Minnesota Steel Co., a subsidiary of the United States Steel Corporation, is building at Duluth, Minn. Although more than a year must elapse before the first hot metal will be melted or the first ingots rolled into finished products, the construction work has now reached a point where a general description of the principal features of this interesting project may be presented. Much work remains to be done, but the leading elements in the design are now fixed and the work still before the constructors is confined to the execution of details along the general lines which already have been laid down. The early plans contemplated a plant to cost $6,000,000. This was in 1906 and it was not until 1912 that the preliminary work was completed and the appropriation made for actual construction. In the meantime the board of directors of the Steel Corporation found it advisable to greatly enlarge the original plans and the total authorized expenditures for steel mills, real estate, cement plant, railroad connections and townsite improvements now amount to over $16,000,000.

As provided in the plans now being executed, the Duluth works will include two 500-ton blast furnaces, 90 Koppers type coke ovens, ten 75-ton open-hearth furnaces with waste heat boilers, four 4-hole soaking pits, a steam-driven, 40-inch blooming mill, a 28-inch rail mill, a 16-inch continuous roughing train, together with 8-inch, 10-inch and 12-inch merchant mills, and three 18-foot gas-fired continuous heating furnaces, combined with the necessary coal storage, power generating, pumping and auxiliary apparatus. The total output is estimated at 350,000 tons of finished material per annum, including rails, track fastenings, shapes and bar products of all kinds. Beams up to 8 inches, channels up to 10 inches, and angles up to 6 x 6 inches will be rolled. On account of its relative nearness to the ore fields and its isolation from large scrap centers, the Duluth plant will undoubtedly use a high percentage of pig iron in its steel-making processes. It is probable this will amount to 75 per cent of the total mixture.

The original site for the plant embraced 1,582 acres located on the west shore of the St. Louis river, about nine miles west of the business center of Duluth, Minn. The topographical map, Fig. 2, shows the general arrangement of the steel plant together with its relation to the townsite and cement plant. The average elevation of the property is about 60 feet above the river. The site is bisected by a small creek, which flows through it in

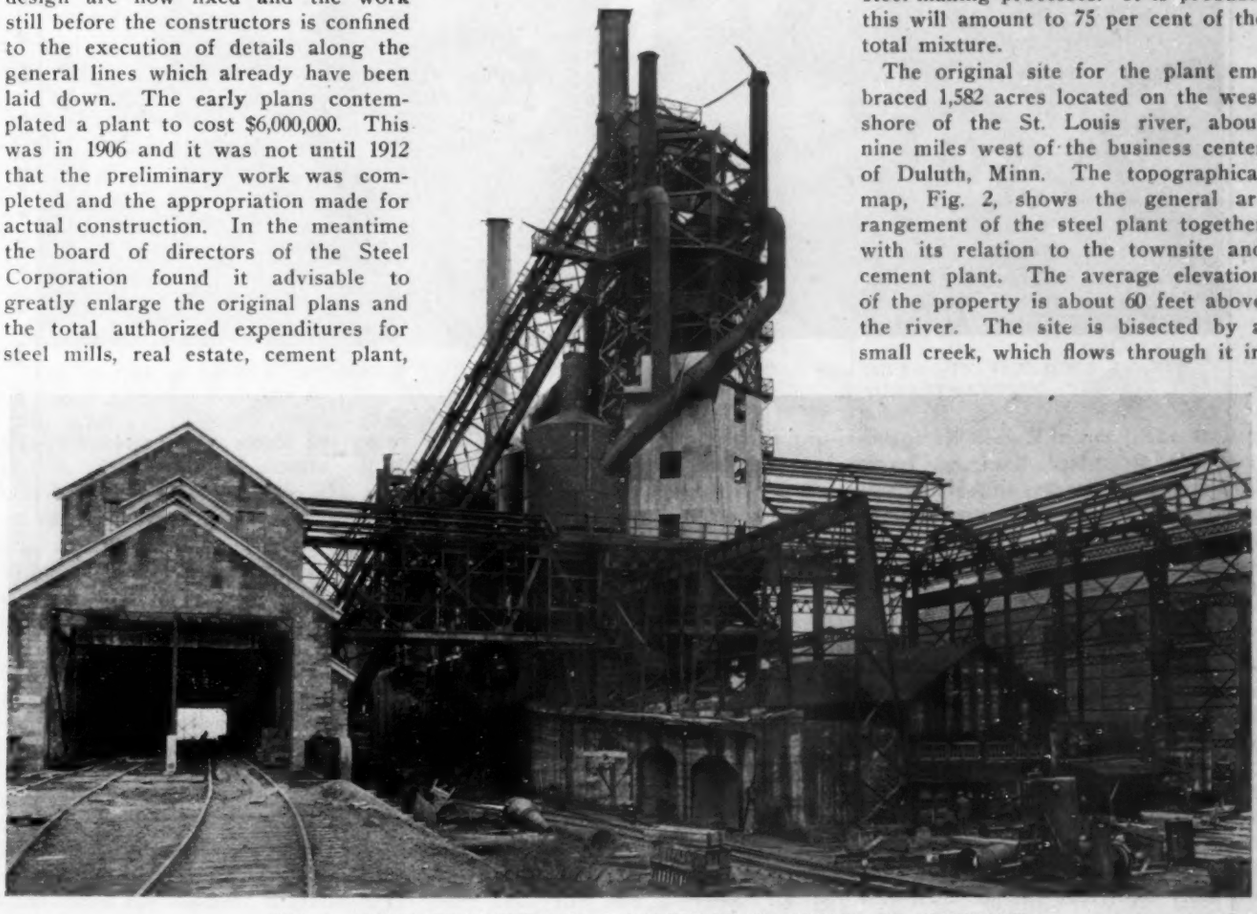


FIG. 1—BLAST FURNACES AND STOCKHOUSE IN COURSE OF ERECTION

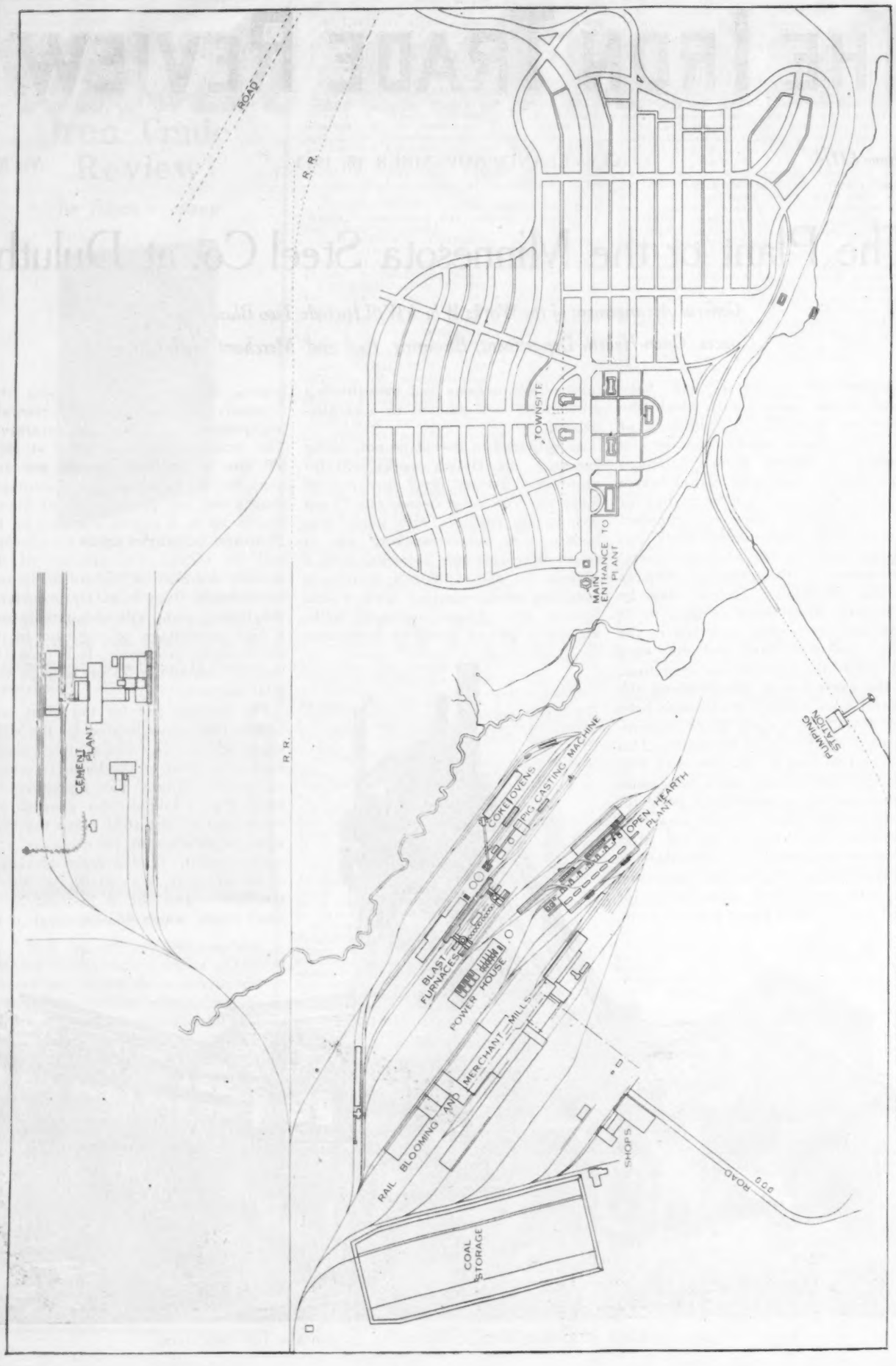



FIG. 2—TOPOGRAPHICAL MAP OF THE PLANT OF THE MINNESOTA STEEL CO., TOWN SITE AND CEMENT PLANT

a general northeasterly direction. The steel plant is located on the south side of this creek, which is utilized for drainage purposes. The townsite is north of the steel plant. The cement plant has been laid out on the extreme western edge of the property. The latter, which is being built by the Universal Portland Cement Co., will have a capacity of approximately 1,400,000 barrels per year.

*Construction of Buildings*

The mill buildings are built with steel frames and walls consisting of two-piece concrete blocks. The blocks were designed by the Minnesota Steel Co. and are so constructed that a continuous air passage is left in the wall. For protection against the weather, the various departments of the plant have been much more completely enclosed than would be necessary in a less rigorous climate. It is not expected, however, that the mill or furnace departments will require any special heating facilities in the winter. The power house and shops will, of course, be heated by steam, utilizing a vacuum system.

The unusual amount of concrete involved in the construction work made it advisable to erect a concrete mixing plant at an early stage. It is located southwest of the mill buildings, as indicated in Fig. 2. The central mixing plant prepares all of the concrete, which is conveyed to the point where it is to be laid in buckets placed on flat cars. The materials from which the concrete is mixed first are placed in screening bins equipped for screening sand, fine and coarse gravel. From these bins the materials are chuted into a measuring hopper, from which they are carried by a skip to the top of the structure and deposited in storage hoppers. Under the storage hoppers is installed a 1¼-yard concrete mixer furnished by the Municipal Engineering & Contracting Co., Chicago. This machine can deliver a batch of concrete each minute. The mixer discharges the concrete directly into the distributing buckets on flat cars. The buckets have a capacity of 1½ cubic yards each and are equipped with drop bottoms. Five buckets are carried on a flat car. At the point where the concrete is to be laid, the buckets are hoisted off the car by a derrick and swung into the proper position before the bottom doors are released. Each bucket has two bails and the derricks are provided with two running cables. One cable supports the weight of the bucket, while the other controls the door. The severe temperatures experienced in the vicinity of Duluth have not prevented concrete laying throughout the winter and work on the plant has progressed without interruption throughout the twelve months of each year. In cold weather the batches are mixed hot and special precautions are taken to protect the newly-laid courses from frost bite. At the present time a large majority of the concrete has been laid.

For fuel the plant will depend upon coal from western Pennsylvania and Gary, W. Va., and the majority of the limestone will be obtained from the Steel Corporation's quarries at Calcite, Mich. Inasmuch as the navigation season on the Great Lakes does not exceed 235 days, sufficient coal and limestone storage must be provided at the works for 130 days' operation during the season of closed navigation. Accordingly, an extensive coal and limestone storage yard has been laid out south of the mill buildings. It is 1,650 feet in length over all and 662 feet in extreme width. Storage for approximately 350,000 tons of coal and 300,000 tons of limestone is provided. The material will be received over the tracks of the Spirit Lake Transfer railroad and handled at the storage site by two traveling 6-ton bridges furnished by the Mead-Morrison Mfg. Co., Boston. The bridges have a span of 382 feet, 6 inches, with an overhang on either end of 139 feet, 9 inches. The trolley travel on each bridge is 600 feet. Eventually the vessels carrying coal and limestone will dock at Wisconsin Point, the terminus of the Spirit Lake Transfer railroad, but at first the Missabe docks at Duluth will be utilized.

FIG. 3—GAS CLEANING APPARATUS UNDER ERECTION

FIG. 4—GAS PRODUCERS IN THE OPEN-HEARTH DEPARTMENT

*No Ore Stored*

On account of the proximity to the Mesabi range, it is unnecessary to provide for ore storage at the steel plant. Ore will be received daily from the mines, in the summer, if advisable, from the open pit properties and in the winter from the underground mines, which operate continuously. It is not expected that the ore will freeze very much on the short haul from the mines to the furnaces, but as a pro-

tection against this condition steam ore thawing facilities have been provided.

The plant will make its own coke in 90 Koppers type ovens, which are now being constructed. They are located immediately northwest of the blast furnaces and will have the usual Koppers regenerative features coupled with the customary equipment for extracting by-products from the gas. It is planned to operate the coke plant in close harmony with the furnace requirements so that excessive accumulations may be avoided. Gas from the coke ovens will be utilized for power and heating purposes.

with its main axis parallel to a line connecting the furnace centers. The bin construction and skip hoist arrangements are standard. The Duquesne type of bucket hoist is used, operated by a Lidgerwood electric hoisting plant. There are two tracks over the bins. The stock house is completely and carefully enclosed as a protection against severe weather. This is, of course, contrary to the customary practice of leaving the bins practically open to the elements.

The blast furnaces have an estimated combined capacity of from 900 to 1,000 tons daily. They have

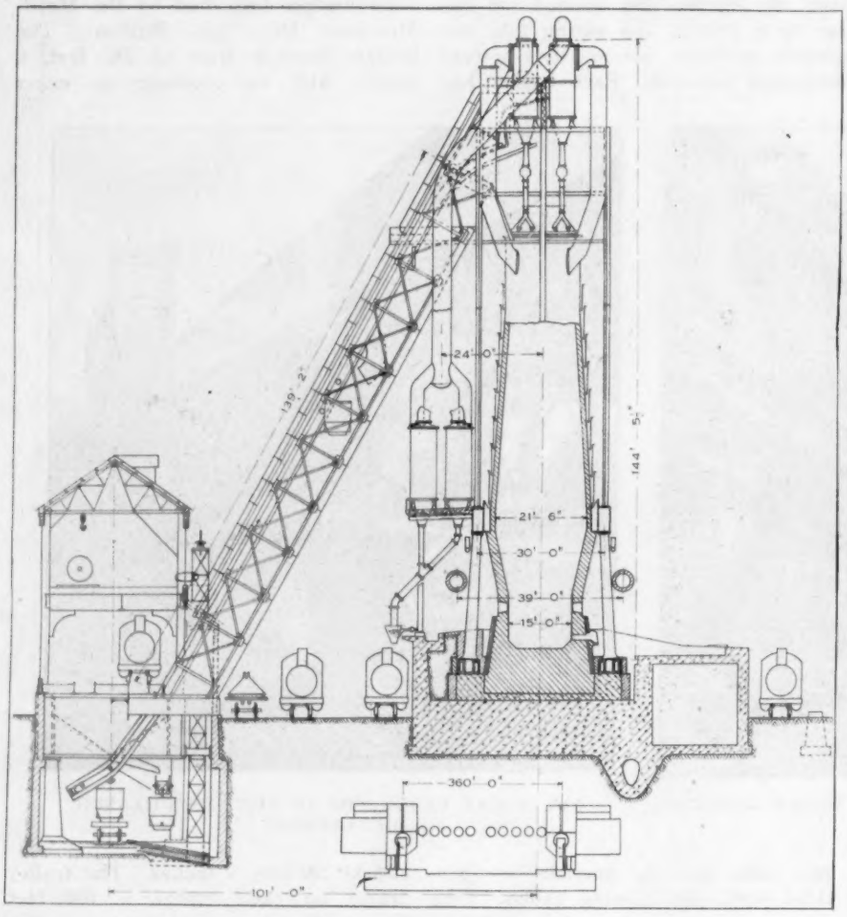



FIG. 5—CROSS-SECTION OF ONE OF THE BLAST FURNACES

The two blast furnaces are placed on a line making an angle of 37½ degrees with the meridian. Each furnace is provided with five McClure type stoves. The latter are arranged in a row between the stacks, the gas washers being placed in front of the stoves. Fig. 5 shows a general elevation of one of the furnaces and Fig. 8 is a plan of the furnace layout, together with its relation to the power house and open-hearth plant.

The stock house, illustrated in Fig. 1, is approximately 530 feet in length. It extends in front of both furnaces

"compromise" linings 16 inches thick. Each furnace is 21½ feet in diameter at the bosh and 98 feet in height. The hearth diameter is 15 feet and the mantle is approximately 29 feet above the hearth. The bustle pipe ring is 39 feet in diameter. The skip and top arrangements present no unusual features, in fact the entire design of the furnaces reflects a close adherence to successfully established principles. In the concrete foundations of each furnace are two 15,000-cubic foot slag pits for granulating the slag before transferring it to the cement plant. Suitable trackage of course is provided so that the hot metal may be run directly into ladle cars which can then be switched to the open-hearth department. A pig-casting machine is located north of the furnaces for taking care of the Sunday melt when the mills are not operating.

The shaft of each furnace will be sheathed with corrugated steel as a protection against the weather. This is shown clearly in Fig. 1.

### *The Stoves*

Five stoves have been provided for each furnace, not on account of their being necessary in the winter, but simply to furnish more liberal heating surface for ordinary all-the-year-round operation. With five stoves available, it is not difficult to maintain the blast at a proper temperature when one stove is withdrawn for repairs. The stoves are of the three-pass McClure type and each set of five is connected to a single stack, as illustrated in Fig. 11. This arrangement is rather unusual and is analogous to a boiler breeching. It insures a hot central draft at all times for any stove in the group which may be starting up cold. The checker-work in the stoves is interesting in that corrugated bricks are utilized instead of the ordinary straight radial type. The corrugated bricks have approximately 17½ per cent more heating surface than straight bricks of similar overall dimensions.

Each stack is provided with two downcomers which lead to dust catchers placed under the skipways, as illustrated in Fig. 1. From the dust catchers, the gas is led through seven primary Zschocke, grid spray washers and thence through Ernst secondary washers. The primary washers and dust catchers are shown clearly in Fig. 3, which gives a good idea of the general arrangement of the piping. Clean gas will be used in the stoves to diminish the necessity for shutting them down for cleaning.

### *The Power Plant*

The power plant, Fig. 6, is housed in a concrete building 528 feet long and 110 feet wide, situated immediately southeast of and parallel to the blast furnaces. The equipment now installed includes four 3,000-kilowatt, twin-tandem gas-driven generator units and five single tandem blowing units, together with a gas-driven air compressor, motor-generators and other auxiliary apparatus. The electric generator units occupy the south half

and the blowing units the north half of the building. The electric units were built by the Allis-Chalmers Mfg. Co., Milwaukee. The 3,000-kilowatt generators deliver 25-cycle, 3-phase, 6,600-volt current. The larger mill motors take this current direct without transformation, but where it is necessary, suitable transformers are installed at the various power consuming points. The blowing engines were furnished by the Bethlehem Steel Corporation. Each blowing engine has a capacity of 20,000 cubic feet per minute. The blowing tubs are fitted with Bethlehem type valves located in the cylinder heads. The air compressor has a capacity of 2,000 cubic feet per minute and is direct-connected to a Snow gas engine. The three motor-generator sets in the power house are rated at 750 kilowatts each. They were furnished by the Westinghouse Electric & Mfg. Co., and are designed to deliver 220-volt direct current.

The general layout of the open-hearth department is shown in Fig. 8 and a typical cross-section in Fig. 9. Ten 75-ton stationary furnaces, together with one 600-ton hot metal mixer, are now being completed. This department is so arranged that it may be extended by building additional furnaces north of those now under construction. Space is provided for the installation of a second 600-ton mixer.

The open-hearth stock house is completely enclosed and is 333 feet in length by 80 feet in width. Between the stock house and the furnaces are situated twenty-eight 10-foot Wellman-Seaver-Morgan gas producers arranged in two batteries of ten and one battery of eight. The gas producers are mechanically-poked and their general arrangement, together with the coal-handling facilities, is shown in Fig. 4. The coal for the producers will be brought to the plant in cars and elevated to storage bins located between the two 10-producer batteries. The storage bins discharge the coal into larry cars which distribute it to the individual producers.

Part of the material in the stock house will be somewhat similarly handled by a series of overhead bins. The general arrangement of the stock house, ore, limestone and dolomite bins is illustrated in Fig. 9. The bins are arranged in three groups and have a combined storage capacity of 1,930 net tons of ore and 1,620 net tons of limestone-dolomite.

With the exception that pressed steel water-cooled buckstays were furnished by the Knox Pressed & Welded Steel Co., Pittsburgh, and heavy steel castings are used to form the end frames, the open-hearth furnaces present no unusual features. They are clean-cut in outline and the hearth of each furnace is 16 x 40 feet. The charging platform is reinforced concrete supported by steel columns. Two electric-driven standard charging machines have been furnished by the Morgan Engineering Co., Alliance, O. This company also provided all the cranes for the open-hearth department. A 10-ton crane with a span of 75 feet is installed in the stockhouse, a 90-ton crane serves the mixer, a 100-ton crane with a span of 75 feet operates over the charging platform and two 150-ton cranes are installed in the pouring bay.

The charging platform is approximately 53 feet in width. The generators extend behind the furnaces, under the platform. The pouring bay is 63 feet in width and the arrangements for pouring ingots are standard. The pouring platform is about 9 feet in width and is connected to suitable escape platforms located outside of the building.

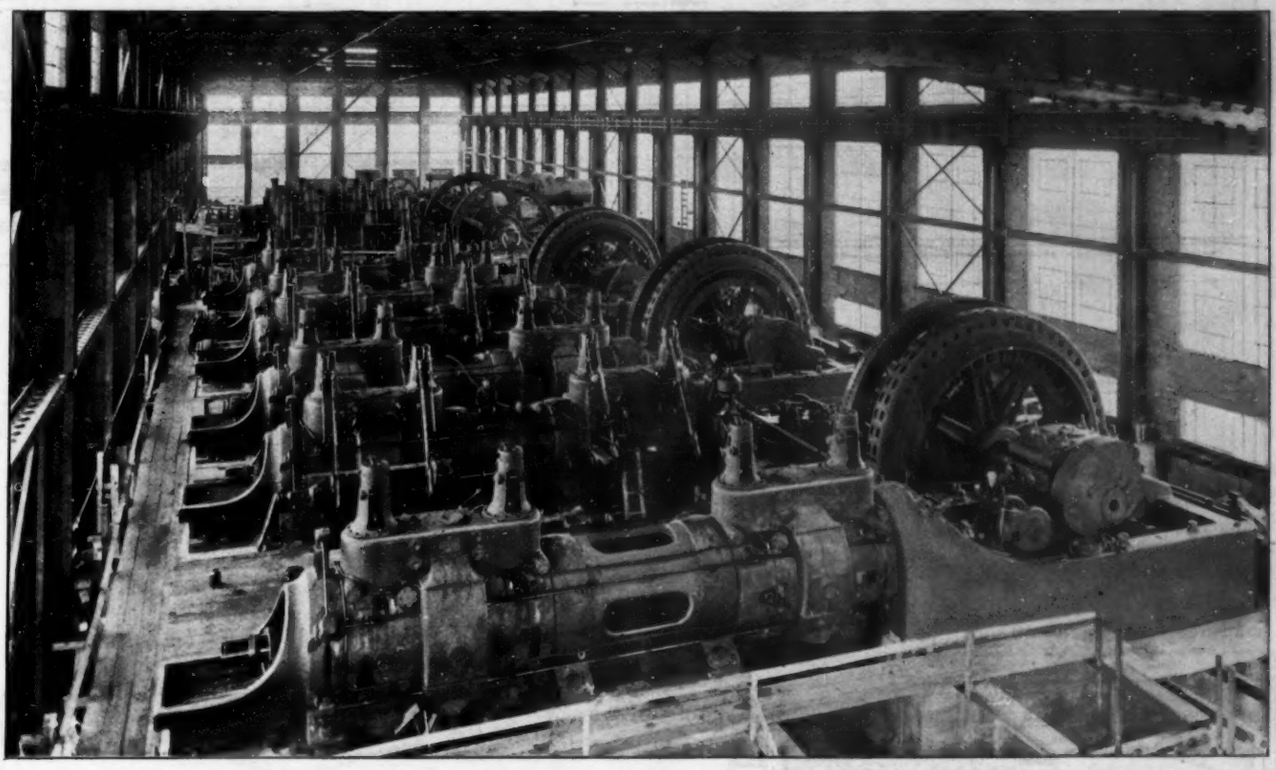


FIG. 6—INTERIOR OF POWER HOUSE, SHOWING 3,000-KILOWATT GAS-DRIVEN GENERATING UNITS

A 437-horsepower waste heat boiler is connected to each open-hearth furnace. The steam thus generated is used to operate the blooming mill engine and for other purposes. After leaving the waste heat boilers, the gases are discharged through tall concrete chimneys, Fig. 10.

Fig. 7 shows the general arrangement of the soaking pits, blooming mill, rail mill, heating furnaces, merchant mills and finishing departments. The soaking pits and ingot strippers are so located that they are conveniently accessible from the open-hearth department. Four pit furnaces have been installed, each con-

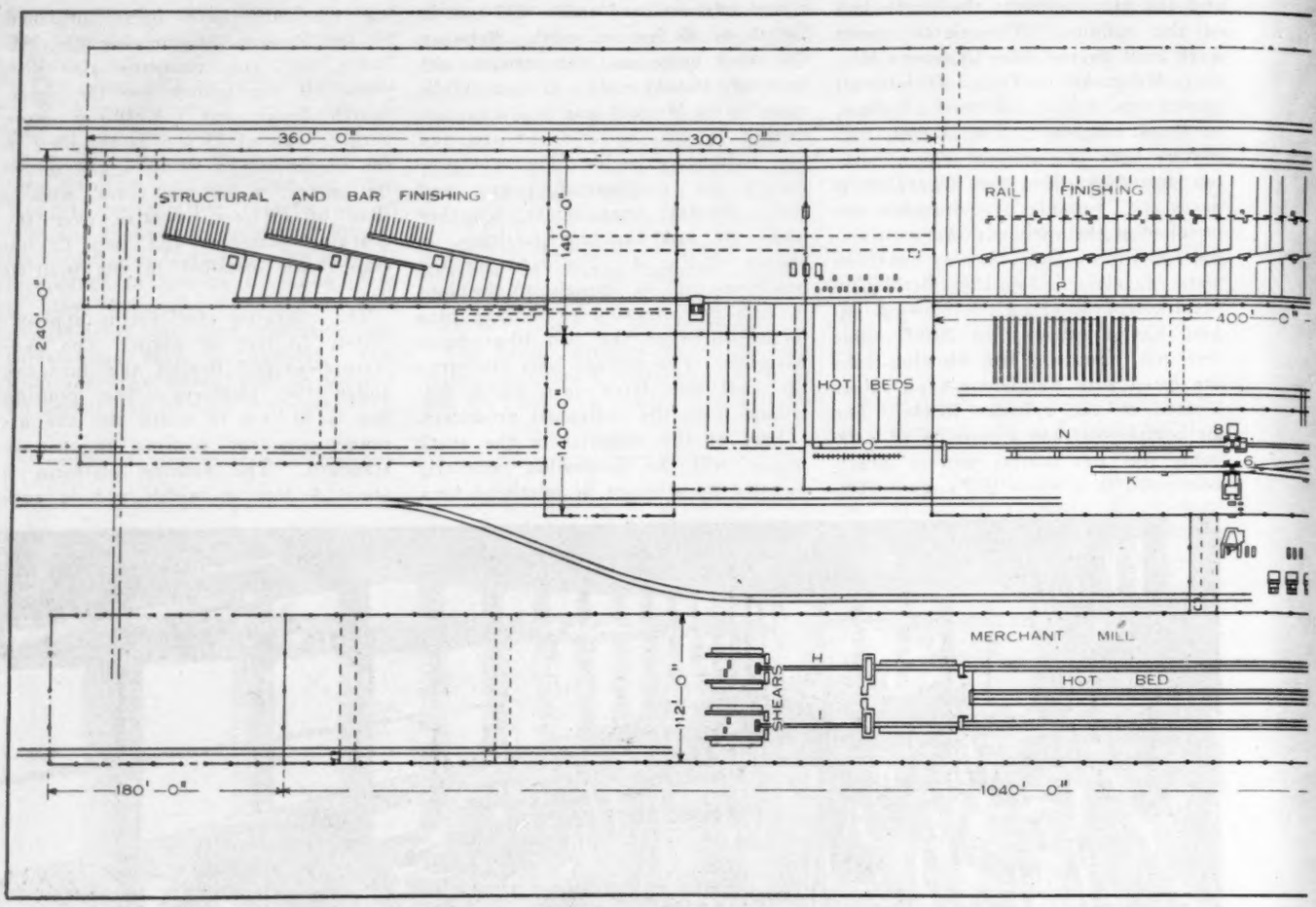



FIG. 7—GENERAL PLAN OF THE SOAKING

taining four holes with a capacity of four ingots. The total soaking pit capacity, therefore, is 64 ingots with an aggregate weight of approximately 320 tons. Gas for combustion in the pit furnaces is supplied by four Wellman-Seaver-Morgan 10-foot producers similar to those installed in the open-hearth department. The producers are located just east of the soaking pit building. The gas from the pit furnaces, before being permitted to escape is passed through an economizer which will heat the feed water for the ten large waste heat boilers.

The hot ingots from the open-hearth department enter on the two tracks shown at the extreme right in Fig. 7. The pit furnace building and the stripper form virtually one structure, 390

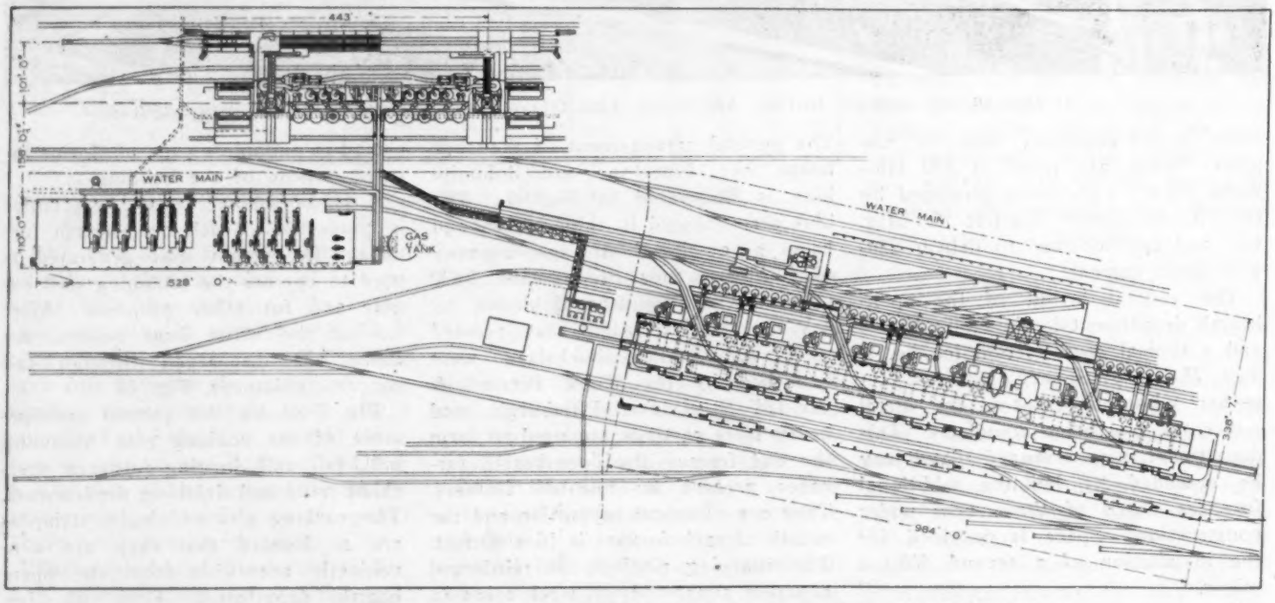
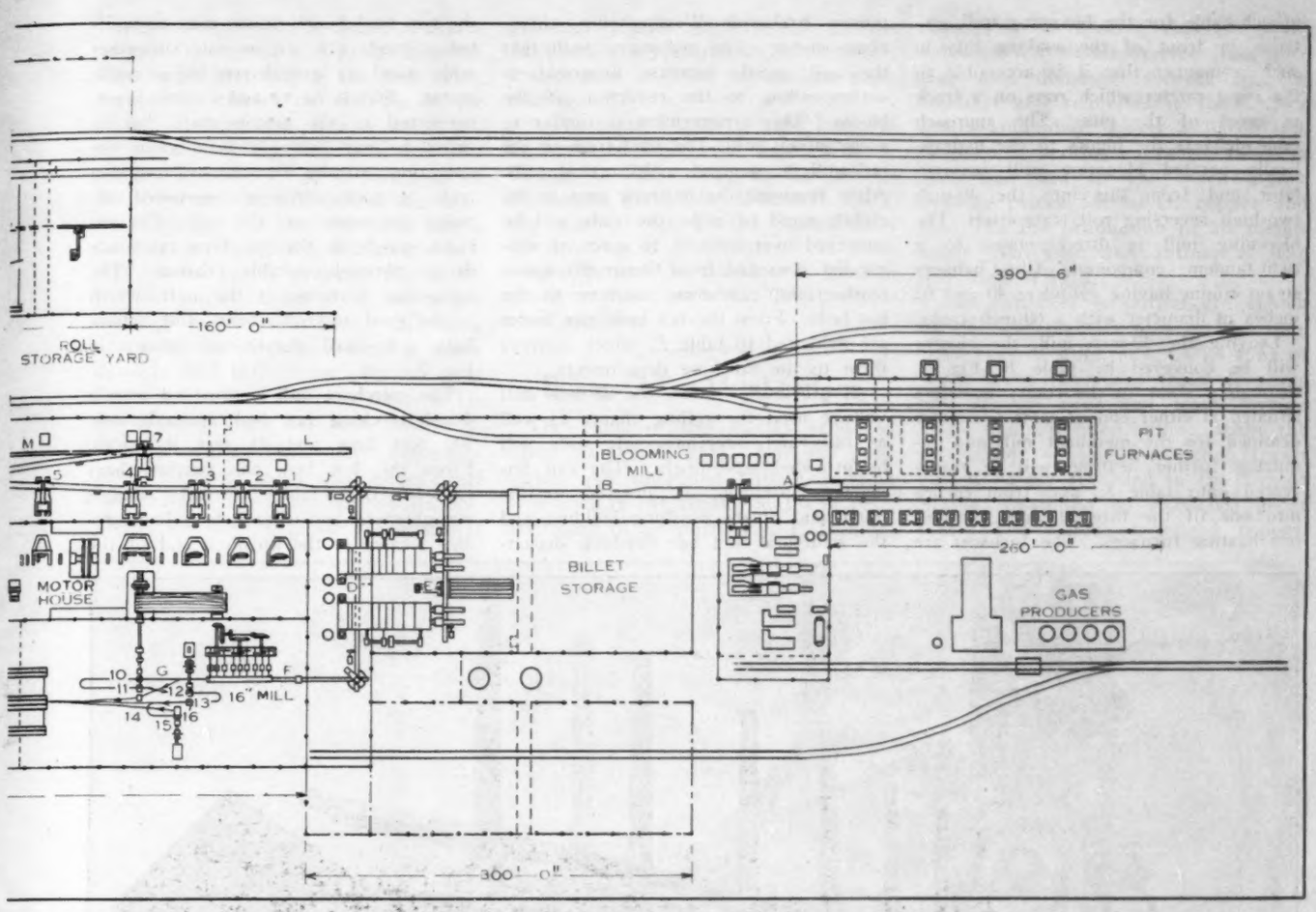



FIG. 8—PLAN OF THE BLAST FURNACE AND OPEN-HEARTH DEPARTMENTS




PITS, BLOOMING MILL, RAIL MILL, ETC.

feet long and 95 feet in width. The stripping end of the building is provided with a 150-ton Morgan stripping crane of the customary type. This crane has a span of about 90 feet and is provided with a 5-ton auxiliary hoist. The soaking pits are served by two 7½-ton Morgan vertical charging cranes. The pit covers are electrically-operated, each cover being connected to a 220-volt Crocker-Wheeler motor through a rack and pinion gear.

The blooming mill building, which forms a continuation of the soaking pit structure, is 280 feet in length and 80 feet in width. It is equipped with a 75-ton Morgan traveling crane.

Table *A*, Fig. 7, which forms the ap-

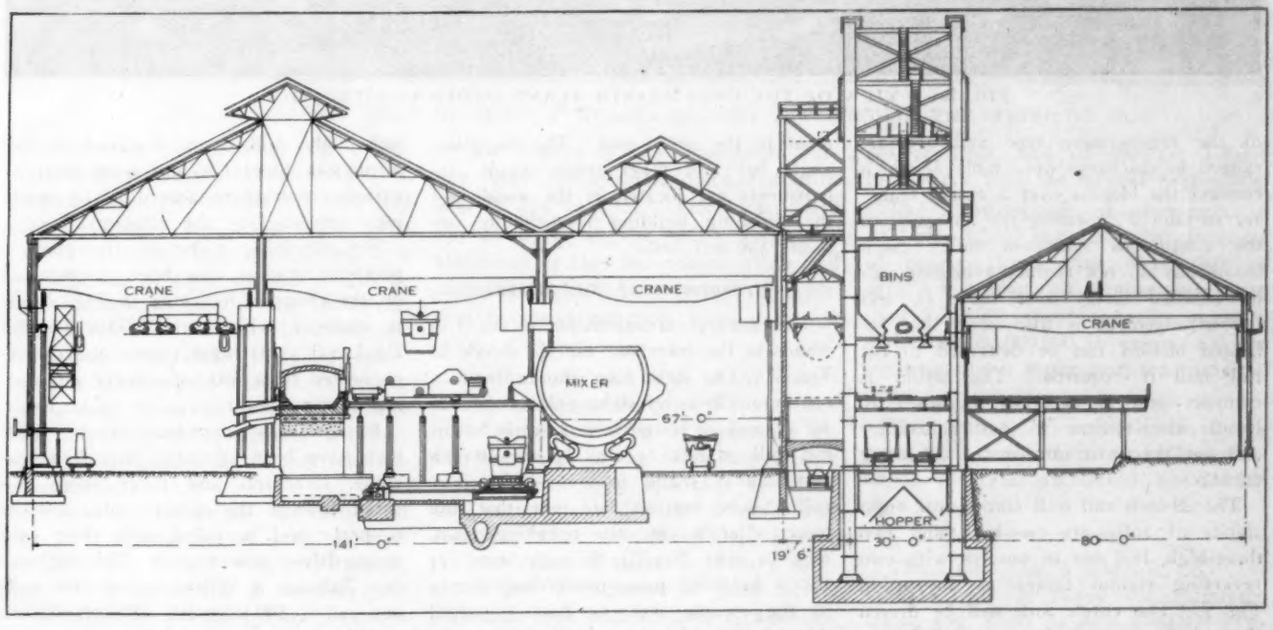



FIG. 9—TYPICAL CROSS-SECTION OF THE OPEN-HEARTH DEPARTMENT

proach table for the blooming mill, extends in front of the soaking pits in such a manner that it is accessible to the ingot carrier which runs on a track in front of the pits. The approach table delivers the ingots to the hydraulically-operated blooming mill manipulator and from this into the 40-inch two-high reversing roll train itself. The blooming mill is direct-coupled to a twin-tandem compound Allis-Chalmers steam engine having cylinders 40 and 62 inches in diameter with a 60-inch stroke.

Leaving the 40-inch mill, the blooms will be conveyed by table *B*, Fig. 7, through a shear to the rotary transfers situated at either end of table *C*. Those destined for the merchant mill and requiring further heating, will be transferred onto table *E*, and from thence into one of the three 18-foot continuous heating furnaces. The furnaces are of the regenerative type and are arranged to discharge onto table *D*, which conveys the blooms over a rotary transfer to table *F*, forming the approach to the continuous merchant mill. Such blooms as do not require reheating can be handled direct over table *D*, and the arrangement is also such that reheated blooms can be delivered to the rail mill if required. The layout is compact and is carefully designed to handle the blooms to best advantage and get the most out of the reheating furnaces.

The 28-inch rail mill consists of eight stands of rolls, six two-high and two three-high, laid out in tandem with two reversing runout tables as shown in Fig. 7. The entire mill will be driven through bevel gears by one 6,000-horsepower, 6,600-volt Westinghouse three-phase motor. The gearing is such that the roll speeds increase progressively corresponding to the reduction of the bloom. This arrangement is similar to a continuous mill. The final train in the rail mill is equipped with vertical rolls. After receiving the finishing pass in the eighth stand of rolls, the rails will be conveyed over table *N* to a set of sliding hot saws and from thence through a marker and cambering machine to the hot beds. From the hot beds, the pieces are delivered to table *P*, which conveys them to the finishing departments.

As previously stated, the 28-inch mill will be used for rolling shapes as well as rails and interchangeable rolls will be provided accordingly. The rail finishing department is situated in the north end of the finishing building and the structural and bar finishing department in the south end. The tie plate, angle bar and other track supply departments are located in the middle of the finishing building immediately opposite the hot beds.

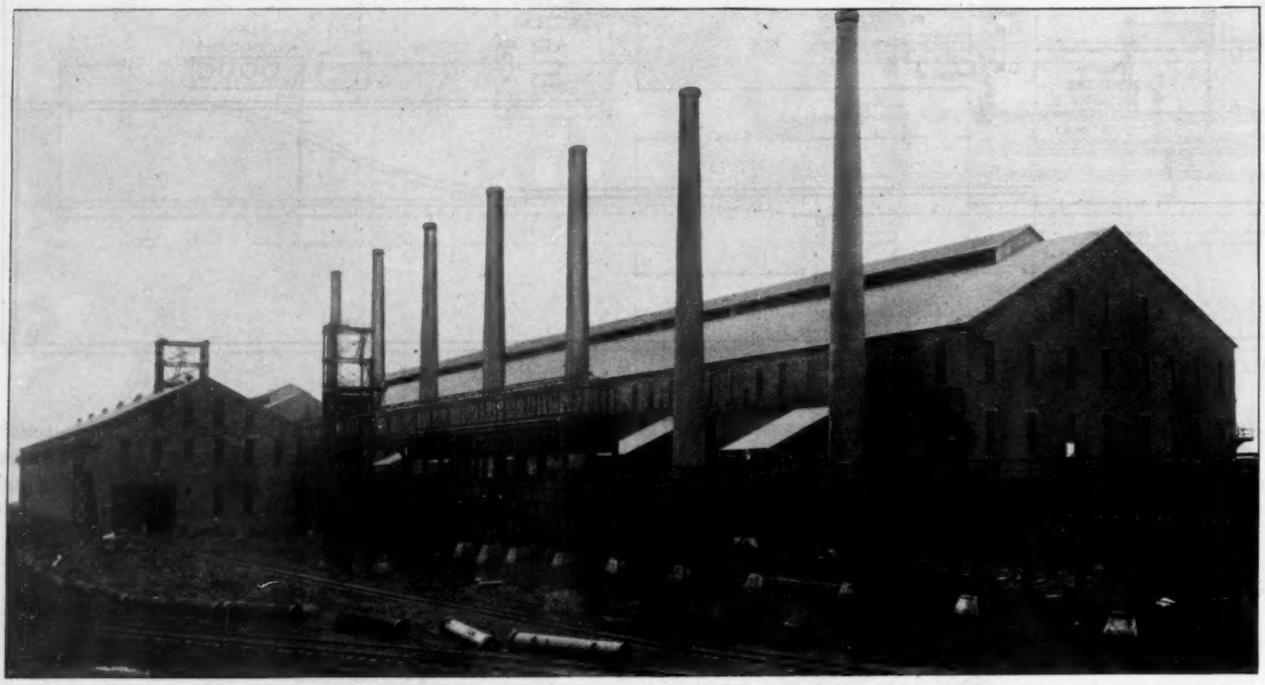


FIG. 10—A VIEW OF THE OPEN-HEARTH PLANT UNDER CONSTRUCTION

### *Arrangement of Roll Stands*

The general arrangement of the roll stands in the merchant mill is shown in Fig. 7. The first nine stands form a continuous 16-inch roughing train. Stands *10*, *11* and *14* comprise a 12-inch finishing mill, stands *12* and *13* are 10-inch and stands *15* and *16* are 8-inch. The roll stands are so laid out that the piece, after leaving the roughing train, may be sent directly through stand *14* for a finishing pass, proceeding thence to the cooling bed, or having passed through the 12-inch and 10-inch stands, the two final 8-inch passes may be omitted. Stands *1* to *11*, inclusive, together with stand *14* are driven by a single motor. Stands *10*, *11* and *14* are direct-connected to the motor shaft, but in order to have some flexibility in the operation of the continuous roughing train, a rope drive is interposed between the motor and the mill. The various stands in the roughing train are driven through suitable gearing. The remaining features of the mill, which is designed to roll round and square bars and small shapes, are shown in Fig. 7.

The merchant mill is provided with a double rocking hot bed approximately 300 feet long and 45 feet in width. From the hot bed, the finished bars run out over tables through suitable straighteners and shears to piling cradles located at the finishing end of the mill. The mills were designed by the Minnesota Steel Co. and were built by various contractors according to drawings furnished by the company.

For supplying water to the plant a pumping station has been constructed on the river as indicated in Fig. 2. It is equipped with four 10,000,000-gallon De Laval centrifugal pumps, each direct-connected to a 500-horsepower alternating current motor.

Exceptionally complete repair facilities have been provided, including machine, structural and forge shops, located toward the eastern edge of the property and provided with their own steam-driven power plant. This includes two Babcock & Wilcox water tube boilers and a 500-kilowatt, 250-volt Crocker-Wheeler generator connected to a

Cooper cross-compound engine. A Nordberg air compressor also is installed. The shops were among the first buildings to be erected on the site of the plant. The machine shop is 280 x 240 feet, the plate shop 140 x 65 feet and the power house 100 x 40 feet. All of the shops are steam heated on the vacuum system. The machine shop has a floor space of about 56,000 square feet. The central bay is equipped with a 25-ton Morgan crane and 5-ton cranes are installed in the side bays. The tools are well-arranged and individual motor drive is used throughout. For handling heavy weights in the plate shop, a 15-ton Morgan crane has been installed.

In accordance with the well-established policy of the United States Steel Corporation in taking care of its employes, the town site near the plant has been carefully laid out and will be provided with all of the conveniences of a modern city. At the present time 170 concrete houses are being built. The subject of accident prevention and first aid will also be given serious consideration. Almost as soon as the brush was cleared from the site, an electric ambulance and completely equipped emergency hospital was erected at the plant. Fortunately, however, due to constant care, the number of serious accidents during construction have been exceedingly limited.

Because of its being the center of the iron mining region, the demand for labor in Duluth fluctuates widely, being at a maximum in summer and a minimum in winter. The construction of works of this kind, which provides steady employment to the workmen the year round, is, therefore, a desirable addition to such a community.

The plant has been built and will be operated under the supervision of George L. Reis, vice president of the Minnesota Steel Co. Elbert H. Gary, chairman of the United States Steel Corporation, is president of the company. Samuel B. Sheldon is general superintendent, and K. C. Hoxie is chief engineer.

## Billion-Dollar Metal Output

The value of the metals produced from domestic ores, foreign ores, matte, and unrefined bullion smelted or refined in the United States in 1912, according to a report by J. P. Dunlop, of the United States Geological Survey, was $995,798,618, compared with $787,727,776 in 1911. The figures are approximate, as the value given for aluminum is that for consumption and includes the imported metal in addition to the production from domestic ores.

The quantity and value of the metals are given for both domestic and foreign sources, but it is necessary to add the value of the secondary metals recovered in 1912 in order to show the vast extent of the refinery and smelting industry in the United States. As the value of these secondary metals, which is exclusive of gold, silver, platinum, iron and aluminum, amounted to over $77,000,000 in 1912, it is reasonable to assume that the total value of the metals derived from foreign and domestic sources by the smelters and refineries in the United States amounted to over $1,100,000,000. A portion of the increased value in 1912 was due to the much higher average prices for silver, copper and zinc, but the production of all metals other than gold and antimonial lead increased in 1912.

The extremes in output are shown by the fact that 1.3 tons of platinum, 188.1 tons of gold, and 4,471.4 tons of silver were recovered from domestic and foreign ores and from foreign matte and unrefined bullion, while the production of pig iron, the largest output of pig recorded in the United States, amounted to 33,802,685 short tons. The yields of refined copper, 734,052 tons, and of spelter, 338,806 tons, were also the largest ever made.

The consumption of aluminum in 1912 was 32,803 short tons, an increase of nearly 10,000 tons over that of 1911. Pig iron production increased over 7,750,000 short tons in quantity and over $93,000,000 in value. Of the pig iron about 4 per cent was smelted from foreign ores.

The quantity of spiegeleisen, ferromanganese and other ferro-alloys marketed in 1912 amounted to 368,126 short tons.

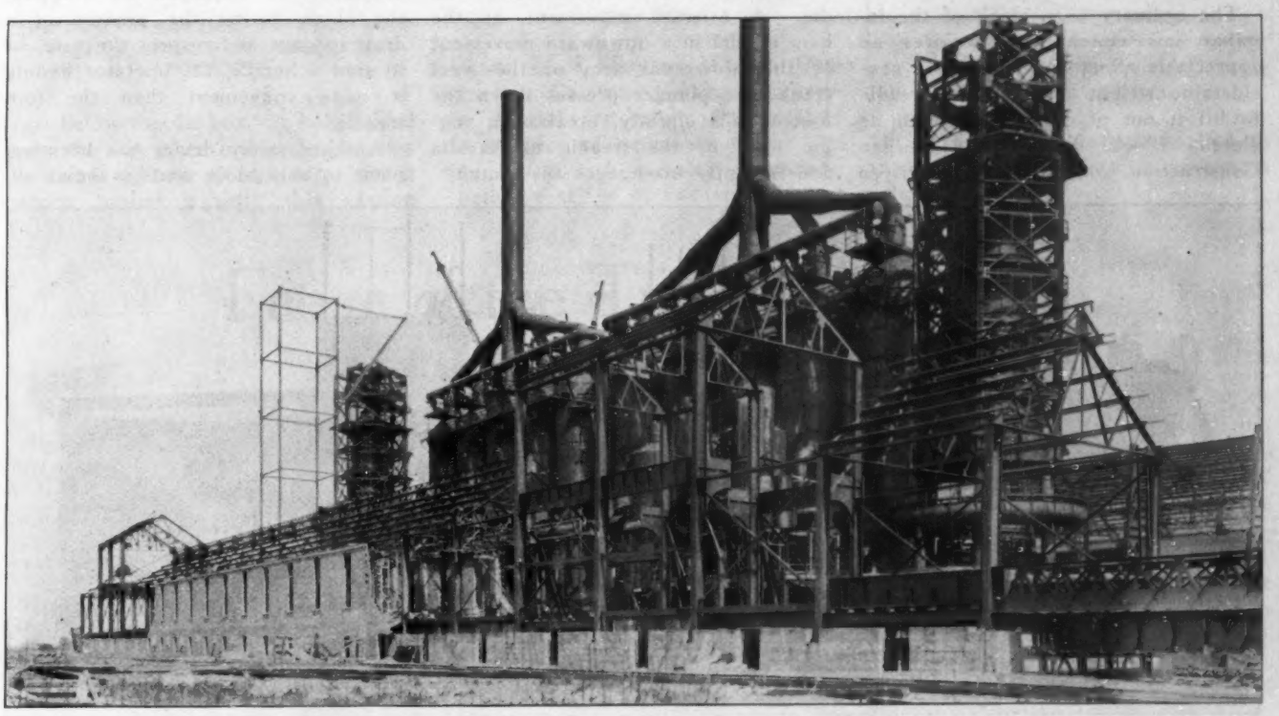


FIG. 11—GENERAL VIEW OF BLAST FURNACES AS THEY APPEARED IN THE SPRING OF 1913

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The Union Gas & Electric Co., Cincinnati, will be ready for estimates about Jan. 1 on its new $500,000 generating plant.

# Morgan Safety Device for Wire Drawing Blocks

*How Wire Mill Operations Are Safeguarded and Accidents Prevented—Design and Construction of Safety Attachment*

In wire mills breaking or looping of wire frequently results in serious accidents to the operators and safety devices now are being extensively installed on wire drawing blocks, which have resulted in practically eliminating accidents entirely on machines so equipped. In the accompanying illustrations are shown automatic safety stopping devices designed by the Morgan Construction Co., Worcester, Mass., and applied by them to their coarse wire drawing blocks.

The ordinary wire block of the familiar jaw clutch type requires an appreciable effort and at times a considerable weight on the foot treadle to lift it out of engagement with its clutch. Blocks built by the Morgan Construction Co., however, are driven by individual friction clutches within the block. These clutches are of the coil type and their take-up mechanism is so designed that a clutch may be released by the application of very little weight on the stopping side of the foot treadle. The amount of force necessary to disengage the clutch is constant and absolutely independent of the amount of work which the clutch is performing. The way in which the necessary motion is imparted automatically to the foot treadle in case of accident is indicated in Fig. 3. The safety loop through which the wire passes on its way to the die is pinned into a small steel bell crank, *A*, which swivels about a fixed point. The horizontal arm of this casting rests upon the top of a plunger whose lower end, when the machine is in operation, rests upon the stopping side of the foot treadle. Figs. 2 and 3 show the device in operating position, while Fig. 1, which is a view of a four-block machine, illustrates the clutches disengaged. Any kink, loop or tangle in the wire, whether or not it has caught the arm or leg of the operator, of course, must come up against the safety loop as it is drawn toward the die. A forward movement of the loop results in a downward movement of the horizontal arm of the steel crank; the plunger presses down the foot treadle slightly, breaking a toggle joint in the treadle mechanism and instantly disengages the clutch.

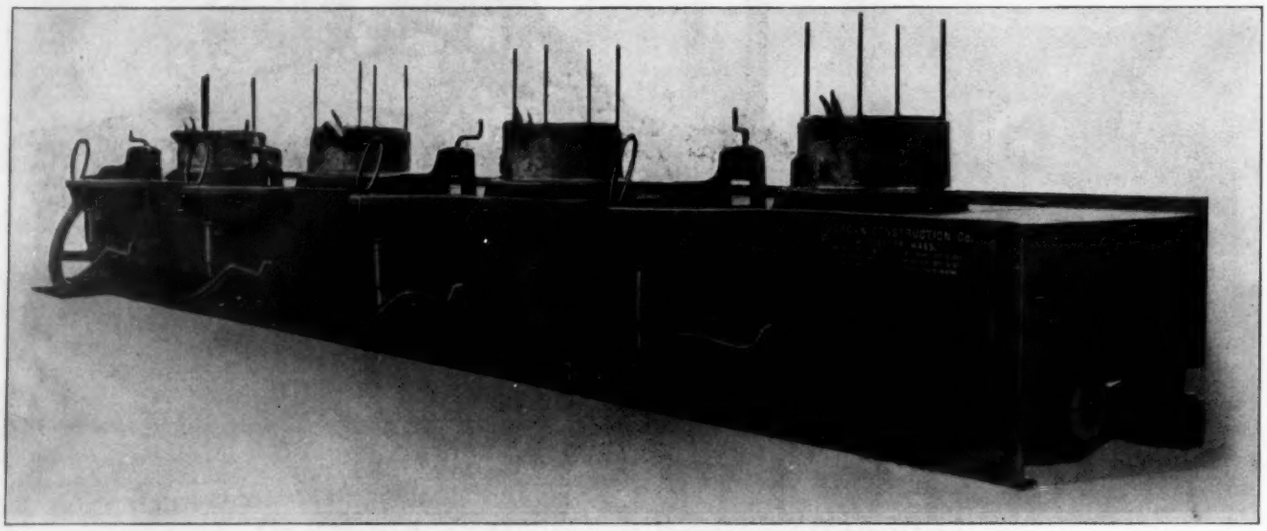


FIG. 1—FOUR-BLOCK WIRE DRAWING MACHINE WITH CLUTCHES DISENGAGED

A spring in the plunger housing, Fig. 3, determines the stiffness of the device and by the selection of a suitable spring the device may be made more or less sensitive, according to the requirements of the product. The safety stop is so designed that there is no way in which its parts can be thrown out of alignment by any unusual condition of the tangled wire. As the primary motion of the safety device is a swivelling movement about a fixed point, it cannot become jammed or obstructed by accumulations of dirt, as would be the case if the loop had a reciprocating motion. Another interesting feature of the device, which is of prime importance, is that the attitude of the wire drawer toward it is distinctly favorable, in striking contrast to the attitude of employes toward safety appliances in general. By them it is regarded as a convenience instead of a nuisance. This is largely due to the fact that its operation does not cut the wire, but stops the block and gives the wire drawer a chance to straighten out the tangle and continue the draft, thereby keeping a full weight bundle. The safety loop constantly is employed for stopping the block during the process of a draft to gage and inspect the wire, or to split a bundle, the operator finding it more convenient than the foot treadle.

Another safety device has been applied to this block and is shown directly below the back end of the die box in Fig. 3. Its purpose is to stop the block the instant the bundle runs out or the wire breaks, thus preventing the loose end of the wire from thrashing around as it would if the block continued to revolve. It is not at all unusual for an operator's face to be cut, or his eye injured by the flying end of the wire as he approaches the block to stop it. Accidents of this character, while generally trivial in comparison with the loss of a limb, are much more frequent than the latter and probably in the aggregate are the cause of more lost time and consequent expense.

Referring to Fig. 3, it will be noted that the die block, instead of being

fastened directly to the top plate, is attached to the steel casting, *B*, which swivels slightly about a fixed point

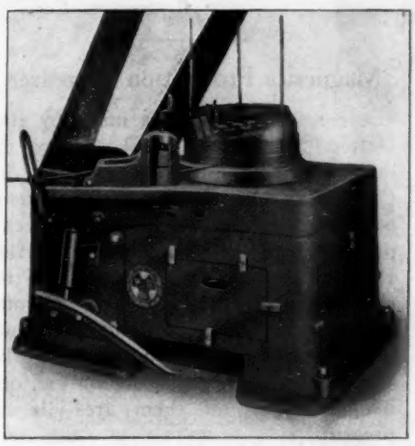


FIG. 2—SINGLE-BLOCK MACHINE WITH SAFETY DEVICE IN OPERATING POSITION

just below the die box. A hole drilled into the top plate under the die box contains a heavy compression spring which pushes against this casting above the pivot and, when the block is not running causes its horizontally projecting arm to keep the safety plunger down. When wire is being drawn the pull on the die carries the box forward slightly, depressing this spring and permitting the plunger and treadle to assume their normal working position, but when the pull ceases, on account of finishing the draft or breaking of the wire, the spring, acting through this casting and depressing the safety plunger, causes the block to stop instantly. Aside from its value as a safety appliance, this feature again is a convenience in that the wire drawer is not obliged to stop his attendance upon other blocks and hurry to stop a block on which the draft just has finished.

*"Safety First"*

Four years ago the Morgan Construction Co., anticipating the present demand for *safety first*, adopted the practice of equipping every friction block with a safety appliance, whether specified or not, and, furthermore, discontinued the building of positive clutch rod and coarse wire frames for the reason that it was believed that safety devices applied to such machines were of uncertain value.

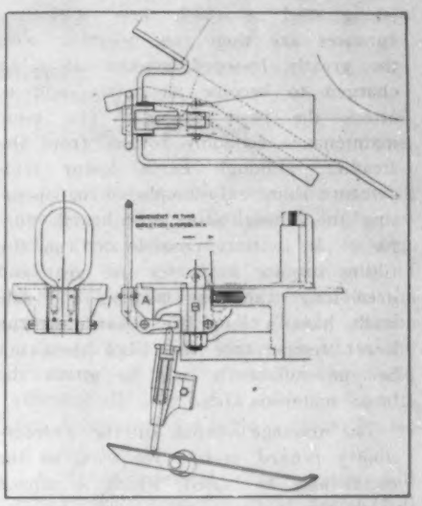


FIG. 3—PLAN AND SECTIONAL VIEW OF SAFETY DEVICE

# Future of the Triplexing Process

*To the Editor:—*

President Wilson has signed the new tariff bill and the protective duty is almost completely withdrawn from iron and steel products. Methods of reducing operating costs now are being studied carefully to enable our manufacturers to compete in both foreign and domestic markets. The policy of curtailing costs by improved methods of operation is to be preferred to the one generally pursued, which involves lower wages for labor and the possible shading of quality of materials to enable steel producers to compete.

*Great Economy*

No step that can be taken by steel manufacturers will effect greater operating economies than the adoption of the triplexing or triple-refining, non-pneumatic or non-Bessemer duplexing basic open-hearth process patented some years ago in the United States and foreign countries. It permits the blast furnace to produce an increased output with a lower consumption of coke per ton of pig iron. When the preliminary open-hearth furnace is employed for refining the metal from the blast furnace, sharp reactions take place and quick crude refining is possible at remarkably low temperatures compared with the heat required for finishing steel. This partly refined pig is then transferred to the finishing basic open-hearth furnace, where it is refined into finished steel remarkably free from ferrous oxides that have a tendency to produce unsound ingots.

By this process, steel can be produced remarkably low in phosphorus, sulphur and other elements which make steel brittle and unreliable, this appearing particularly after various *work hardening* treatments in hot and cold rolling, stamping and drawing operations. This appears in rails subjected to the continuous stress of heavy railroad traffic, especially in cold weather.

By this process the best grades of basic open-hearth steel have been produced in the finishing furnace in from three to five hours or in one-quarter to one-third the time generally required per heat for open-hearth steel when no preliminary furnace is employed.

This great saving of time and fuel and increased, or more thorough, refinement of the steel is accomplished largely by taking advantage of the sharp reactions or "kick-backs" in working and the opportunities offered to better handle the slags to more thoroughly remove and kill the foaming and gaseous properties of the steel, if any remaining, as best accomplished when making judicious use of the Lackawanna or Talbot type of tilting furnace for *preliminary* basic open-hearth furnace work.

These tilting furnaces, by this process, are thus greatly favored in the matter of cost of maintenance and fuel as they are run at a lower and more uniform heat than when *finishing* steel therein.

This feature makes practical the use of tilting furnaces and removes one of the most serious objections to them, but retains their many advantages. Stationary furnaces also have been used for the preliminary furnace work.

*Triplexing Process*

By this triplexing process there is secured a much greater degree of uniformity in the quality of the output than with Bessemer duplexing system, or even the usual open-hearth as commonly and expeditiously utilized. This is commonly attributed to the fact that the steel is made and finished in the stationary open-hearth furnace, using finishing furnaces of relatively moderate tonnage units, starting therein with a superior analysis of molten pig or metal as compared with the crude blast furnace metal. There is also secured a lower cost of furnace maintenance per ton of steel produced because the stationary furnaces are thus operated only to finish steel and for which a large part of the metallic

charge has first been refined in the preliminary open-hearth furnace. This results from more uniformity in the higher temperatures required for finishing steel at which these stationary furnaces are then run, together with the greatly lessened amount of silica charged to become an active acid to attack the basic linings. The same maintenance economy results from the steadier, although much lower temperature constantly employed in operating the tilting basic open-hearth furnace. It is thus possible to run the tilting furnace roofs for one year and even longer and the bottoms and side walls have a long life because at the lower temperature the silica does not become sufficiently acid to attack the basic materials.

The tonnage output of the *extraordinary refined molten pig iron*, as the metal may be called, which is tapped from this preliminary furnace, because of the great rapidity of its reactions at these lower temperatures, is sufficient to keep supplied quite a number of these stationary steel finishing furnaces.

*Bessemer Duplexing*

By the Bessemer duplexing process, the iron is understood to be first made into a Bessemer steel, carrying its usual ferrous oxides and other impurities. At present this Bessemer steel is more or less hastily finished by being passed in its molten state through these large tilting furnaces where, undoubtedly, its condition is improved somewhat, notwithstanding the extreme size of these furnaces when used as finishing mediums, especially considering the expedition generally employed for thus finishing each heat of Bessemer duplexed steel.

But is this Bessemer duplexed metal what the railroads and other consumers of this country want, and is it really basic open-hearth steel when first made into real Bessemer steel by a Bessemer converter blowing process? Some say, "No". What they want is the real basic open-hearth steel, that is, made and finished in open-hearth furnaces only from start to finish.

Many tests of various steels have demonstrated that there is a pronounced difference in quality in favor of the real basic open-hearth steel, and it is pleasing to note that rails, for example, can be made in this country by the triplexing process, producing, as it does, cheaply and expeditiously, real, extra-refined basic open-hearth metal.

The costs of production compare favorably with the Bessemer duplexing process, since it saves the five to ten per cent of the iron lost through oxidation in Bessemerizing, and much of the blooming and finishing mill losses in producing merchantable, perfect product.

Many of these wonderfully effective reducing or purifying and economic features also can be secured without the use of a tilting furnace. When using a stationary furnace for the preliminary molten pig refining, also without the use of the molten metal from the blast furnace, simply adopting so much of this triplexing process as follows the blast furnace treatment, using instead a cold charge of metal, but the frequency of the finishing furnace heats may then be not less than four hours. However, the steel thus made is extraordinarily low in phosphorus and sulphur and is secured in much less time than when basic open-hearth steel is made without the duplexing method known as the Palmer-Wilmot process. Such duplexing requires from 4 to 5 hours per heat.

All-basic open-hearth steel is made by this process with a low cost for plant investment per unit of output, because of its greater efficiency in the production of steel of a given standard of high quality. Furthermore, the capacity for existing open-hearth plants can thus be doubled or trebled at less than the proportional former cost of additions per ton of capacity.

That a further marked advance will be made the next few years in the quality of American steel is prophesied, especially that used for rails, structural material and for other applications where uniformity of quality is essential for the safety of life.

The consideration of such problems in the production of rails is compelled by the growing tendency toward increased weight of rolling stock, owing to the adoption of all-steel cars for through trains and heavier locomotives to draw them.

Some argue that rails today already are overtaxed, particularly for the stress of cold weather travel and that the continued toughness and hardness of quality must be improved because of the serious difficulties involved in changing clearance in switches, crossovers, etc., when increasing the strength of the rails through increased size in cross-section, and this irrespective of increase in costs per mile of track through increase in weight per yard. The flanges on car and locomotive wheels already have reached the limit of size, for the same reason; hence the extensive adoption of steel car wheels to secure increased strength, thus improving their quality to an extreme as compared with the formerly universally used chilled iron wheels.

There can be no question but that the same wise policy will be applied, and to a constantly increasing extent, in dealing with the present rail problem, both here and abroad.

FRANK ASHLEY WILMOT,
Bridgeport, Conn.

## Magnesite Production Increases

According to inquiries made by the United States Geological Survey of numerous magnesite mine owners in California who did not work their properties last year, the belief is expressed that on the opening of the Panama canal they will be able to ship the magnesite by sea at a profit and will then open the mines and find a market. There are numerous workable deposits of magnesite in California, but most of them are idle at present.

Outside of the state of California no magnesite is produced in commercial quantity in the United States. In 1912 the California output was 10,512 tons of crude ore, valued at $105,120, compared with 9,375 tons in 1911, valued at $75,000. The demand for the domestic product is restricted to the Pacific coast, it being unprofitable to ship the material at present railroad freight rates to the point of largest consumption in the United States.

The principal uses of magnesite are for various refractory products, such as brick, furnace hearths, and crucibles; in the form of magnesium sulphite for the digestion and whitening of wood pulp paper; in crude form for the manufacture of carbon dioxide; calcined and ground for oxychloride or Sorel cement and other uses; and as refined magnesia salts for miscellaneous uses.

## A Feeder for Boiler Graphite

A feeding device for boiler graphite furnished by the United States Graphite Co., Saginaw, Mich., is provided with a reservoir, equipped with valves whereby the water pressure may be shut off entirely. The valve then is opened, admitting water at ordinary city pressure to the reservoir of the feeder and a mixture of water and graphite is fed through an outlet valve at the bottom of the reservoir into the feed water on the suction side of the pump. The valve controlling the passage of the water containing the graphite can readily be adjusted by closely watching the water glass.

The Nisqually Iron Works, Tacoma, Wash., has changed its name to the Nisqually-Russell Car & Locomotive Works.

# Fire Pump Motors of Alternating Current Type

*Description of a Controller for a Motor-Driven Fire Pump Built by the Cutler-Hammer Mfg. Co., Milwaukee*

By H P Reed

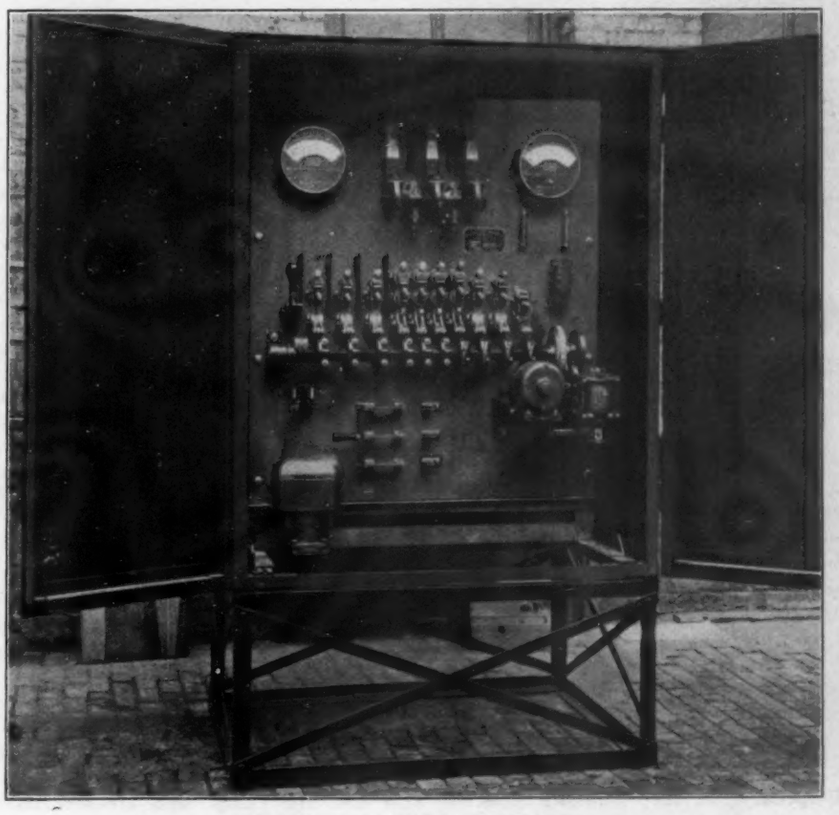
Installing a fire pump that is apt to balk when it is called upon to operate is just about as bad as having only a dummy pump. It is probably worse, because it gives a false sense of security. As most pumps are operated at present by means of an electric motor, the selection of the type of motor is of considerable importance.

The last book of rules issued by the National Board of Fire Underwriters covering all types of fire pumps was published in 1904. These rules have been partially, at least, superseded by the rules made by the same board in 1911. The 1911 rules bear the title, "Rules and Requirements of the National Board of Fire Underwriters for Centrifugal Fire Pumps", and they specify a switchboard controlling the motor to contain a suitable switch, a voltmeter, an ammeter, and a circuit-breaker. These parts are in addition to the starting apparatus. The rules also require that the switchboard must be protected from water coming in from the possible leakage or breakage of any connections at the pump or other piping in its vicinity. These specifications give in general the requirements for the control board. Much is left to the contractor or pump builder, for he must decide upon the type of motor to use.

There are two kinds of alternating current motors, which lend themselves to fire pump work, namely the squirrel cage and the slip-ring types. It is generally conceded that the squirrel cage motor is adaptable to many installations due to the fact that it has not the complications of a slip ring motor. The brushes on a slip ring motor necessarily have arcing contacts. For fire pump service, however, where the motor and controller are always properly closed, the objections to the slip ring motor are overcome and there are many reasons why this type of motor is also adapted to fire pump work.

From an engineering and from a safety viewpoint, the squirrel cage motor is rather undesirable. The principal objections to this motor are its high running torque and its low starting torque. Combined with these features is the fact that it is difficult for an unskilled operator to accelerate a squirrel cage motor without danger of taking a high current from the line, and the possibility of tripping the circuit-breaker. In times of excitement, when there is a fire and when the night watchman is liable to be called upon to start the fire pump, he will not wait sufficiently long on the starting *tap* for the motor to accelerate properly, but will be very much inclined to throw over quickly to the running position. This will draw a high current from the line, and as in this position the overload release coils of the circuit-breaker are in circuit, the circuit-breaker will be liable to be stripped out. This will necessitate the resetting of the circuit-breaker and starting all over again with the resultant delay and probable increased loss of property.

A large squirrel cage motor will take from seven to eight times full load current with the rotor stalled, and full voltage applied to the motor terminals. Even with the most skillful operator, the motor, as ordinarily provided with a potential starter, will take at least four times its full load current from the line. If the operator is in a hurry he is apt to make the motor take six or seven times full load current. In order to equalize the starting surges, the operator should leave the motor on the starting tap until the motor has reached 80 per cent of full speed. This takes a comparatively long time. The low starting torque of the squirrel cage motor is an objectionable characteristic for fire pump service. The starting torque developed on a moderately sized fire pump squirrel cage motor with about half voltage at the motor terminals, is not over 25 or 30 per cent of full load torque. Where such a motor is installed in a comparatively high building, the motor will possibly not be able to accelerate at all on account of the pressure head. The squirrel cage motor is, therefore, inferior to the slip ring motor for fire pump installations



ENCLOSED FIRE PUMP STARTER

where reliability and ease of operation should be the primary considerations.

In acceleration, the latter type of motor acts similar to the shunt-wound direct current motor, and while the results in starting are not equal to the compound-wound direct current motor, the starting torque is sufficiently high to allow the motor to be accelerated quickly and easily without taking a heavy current from the line, and, therefore, without danger of tripping the circuit-breaker. The slip ring motor is consequently well suited for fire pump duty.

*Fire Pump Controller*

The controller for the fire pump motor must be simple in design, easy to operate and reliable. The Cutler-Hammer Mfg. Co., Milwaukee, has recently designed a new motor-driven alternating current fire pump controller, shown in the accompanying illustration. Mounted on the control panel are a voltmeter, an ammeter, a three-pole rigid arm plain overload circuit breaker, a three-pole double-throw knife switch, a pressure governor and a combined manual and automatic fire pump motor starter. At the back of the panel in a suitable angle iron frame are mounted the cast iron resistance grids, which are used as the starting resistance in the secondary circuit of the motor. The whole controller is enclosed in a sheet iron, splash-roof case, mounted on a pedestal, 2 feet high. The double-throw knife switch is for transferring the motor from one set of service lines to another, as connection to two separate power lines is often provided for reliability. The starter proper consists of a square shaft, above which are mounted the three primary and the six secondary cam-operated switches. There is also an auxiliary cam-operated switch at the extreme right. The cam shaft, which actuates these switches is revolved for manual operation by a hand lever, shown at the extreme left.

*Manual Operation Important*

The manual operation is of primary importance, and it is only necessary for the operator, who may be an inexperienced night watchman, to pull the hand lever from the upper position through 180 degrees to the lower or full running position. The lever is held in the running position by an automatic coil. The movement of the lever first closes the three primary switches simultaneously and then closes the secondary resistance switches in proper succession, until the motor is brought up to full speed. The secondary switches are so designed that the resistance is cut out of each phase, at the same time in equal portions and thus the motor is kept balanced during the starting period. On failure of voltage or at will of the operator, the switches are all opened, the shaft being returned by a heavy clock spring.

*Automatic Control*

If automatic control can be conveniently incorporated without complicating the hand operation, it gives a satisfactory method for maintaining a constant water pressure when a single sprinkler head opens, or when a leak develops in the piping system. Furthermore, the automatic operation provides a safety feature which is not available in a straight hand starter. Watchmen are prone to leave the building or the section of the building where the controller is installed and in case of fire, the automatic control feature is a decided advantage, as it puts the pump in operation and keeps the pressure up to maintain a sufficient water supply.

As in hand operation, the cam shaft is revolved to start the motor, but the operation in this case is taken care of automatically by a pilot motor, mounted on a bracket below the right hand portion of the shaft. The motor drives the shaft through a worm gear reduction, the gears running in oil. A solenoid-operated clutch is placed between the reduction gear box and the cam shaft. The automatic starting operation is as follows: When the pressure in the tank or stand pipe falls below a predetermined amount, due to opening of sprinkler heads, leaks, etc., the pressure governor closes the control circuit for a small two-pole magnetic switch, located just above the cam shaft. This switch controls the pilot motor circuit. At the same time the governor closes the clutch solenoid circuit. The pilot motor revolves and a spring behind the movable jaw clutch member is compressed by the clutch solenoid. As soon as the jaws match, the spring causes the clutch to engage and the cam shaft is revolved. The three primary switches are then quickly operated and the secondary switches are next closed in succession, cutting resistance out of the motor rotor circuit as in the case of hand operation. After the last secondary switch is closed, the auxiliary cam switch opens and drops out the pilot motor switch, thus stopping the pilot motor and preventing further revolution of the cam shaft. The worm gear reduction prevents the motor from revolving backward, and keeps the switches in the running position with the fire pump motor up to speed.

The clutch solenoid remains in until the pressure in the sprinkler system reaches the required maximum, when the pressure governor opens the circuit to the clutch solenoid, disengaging the clutch. The heavy clock spring returns the cam shaft quickly to the *off* position. The clutch solenoid acts, therefore, as an automatic no-voltage release, because the solenoid, when de-energized, allows the starter to return to the *off* position, stopping the motor.

The entire controller is built to meet the most rigid fire pump requirements. There are no iron to iron bearings and all parts are designed to withstand the effects of periods of idleness in damp locations. A fire pump controller must be ready to start on a moment's notice, even though it may have been idle for a month or more. The feature of this fire pump controller is its adaptability to either hand or automatic operation without any mechanical change.

## Book Review

Hendricks' Commercial Register, 1,635 pages, published by the C. E. Hendricks Co., 74 Lafayette street, New York City, and furnished by THE IRON TRADE REVIEW, Cleveland, for $10 net.

The 22d annual revised edition of Hendricks' Commercial Register contains 1,635 pages, an addition of 89 pages as compared with the previous number. The register covers completely the architectural, engineering, electrical, mechanical, mining, manufacturing and kindred trades and professions. The index requires 138 pages and there are approximately 400 classifications on each page, or a total of about 55,000 in the work. The register is so arranged that the book can be used either for purchasing or mailing purposes, the manufacturers first being classified under a general head and then subdivided under as many classifications as are necessary to represent their product. The trade names of all articles classified, to a large extent, are included.

A circular describing spring plug cocks recently has been issued by the National Tube Co., Pittsburgh. These cocks are made in different metals for varying services, including types with iron bodies, brass plugs and springs for steam, water or compressed air; all-brass for steam, water or compressed air and all-iron, especially adapted for alkaline solutions. The cocks are tested to 250 pounds water pressure and to 125 pounds compressed air under water and are recommended for 125 pounds working pressure.

# Design of a Three-High Universal Plate Mill

*Installed in the Rolling Department of the Harrisburg Pipe & Pipe Bending Co.—Mill Constructed in Record Time*

A new three-high, 21-inch universal plate mill recently has been installed in the rolling mill department of the Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa., which will replace a 20-inch groove mill. The universal mill is designed to roll plates from 4 to 18 inches wide, down to 0.072 inch thick, or No. 15 gage. The decision to install this mill was made during the early part of June this year and immediately thereafter the mill was designed and built, and on Sept. 29 the first slab was successfully rolled to width and gage. The short period during which this mill was designed and built establishes a remarkable record in rolling mill construction, and this is the more noteworthy in view of the fact that the means for doing this work at this company's plant are somewhat limited.

The mill shown in Figs. 1 and 2 is of heavy construction throughout, all of the parts having been made oversize wherever possible. The housings consist of air furnace castings and are very heavy to insure rigidity. The boxes and practically all of the fillings are made of steel, while all of the bearings are bushed to permit of making repairs easily and quickly. The bearings for the middle roll are removable from the outside, and by the use of a special balancing apparatus this roll can be taken out and a new one inserted in a very short time. The vertical rolls also are designed to permit of their rapid removal. To make a change in the vertical rolls the bonnets are removed from the yokes carrying the bevel gears, the rest bars from the front of the mill are removed and the vertical rolls are taken from their housings and new rolls inserted in their place.

Special attention also was given to the bottom vertical roll bearing which, as a rule, causes considerable trouble in mills of this type. The bronze bushing extends up into a groove turned in the body of the roll, thereby protecting the bearing absolutely from all water and scale. Positive lubrication of this bearing is secured through a hole in the center of the vertical roll, running its entire length. Judging from the small amount of wear on the vertical rolls and their bearings during the first five weeks of operation, they should last several months before their removal from the mill. The working body of the vertical roll is 14½ inches in diameter with an 8-inch diameter neck.

The main rolls are 21½ inches in diameter with 14-inch necks, the length of the working body of the roll being only 23 inches. The top roll is balanced by means of two hydraulic cylinders underneath the housings. As shown in Fig. 2, it will be noted that the middle roll is lifted by an hydraulic cylinder on the side of the housing, permitting of easy access for packing and for making the necessary

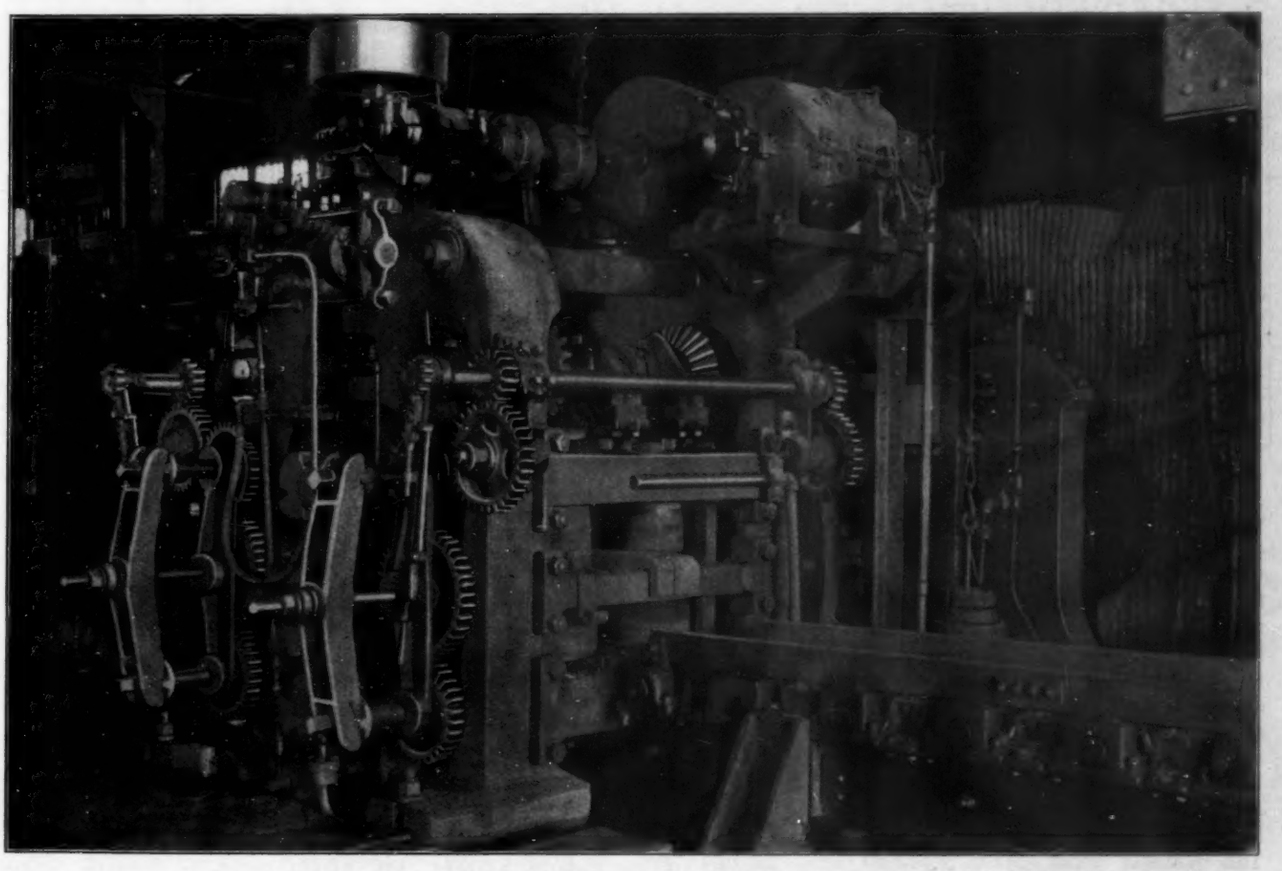


FIG. 1—THREE-HIGH UNIVERSAL PLATE MILL, DESIGNED, BUILT AND INSTALLED BY THE HARRISBURG PIPE & PIPE BENDING CO., HARRISBURG, PA.

adjustments. Both the top and bottom main rolls are provided with wedges to facilitate accurately leveling the mill and to insure the straight delivery of the material. On account of the small amount of adjusting required on the vertical rolls, ratchets are provided for their in and out movement, although their design is such that motors may be applied at any time.

The screw-down is somewhat faster than is required by ordinary practice, the 35-horsepower Westinghouse mill motor being connected to the screws with a suitable gear and worm in a 16 to 1 ratio. The motor is operated with a General Electric magnetic switch controller and an Electric Controller & Mfg. Co. brake. It has been found with this control apparatus that the production of the mill is not limited or retarded by the screw man, but is governed only by the speed of the rolls and the ability of the table runner to handle the bars in and out of the mill.

This universal mill is operated in conjunction with a three-high bullhead stand which serves as a finisher. This bullhead stand also is of rigid construction and is so arranged that three reductions are obtained on it, enabling the plate or bar to be reduced to one-half its thickness. With the use of these two mills, the one operating as a roughing stand and the other as a finishing stand, it is possible to roll down to light gages and at the same time to produce material that is accurate to gage and which has a fine surface finish free from scale and other defects. The necessary equipment also has been installed to permit of the shipment of the product of these mills in lengths cut to order or in coils, as the customer may require. The speed of the horizontal rolls is 90 revolutions per minute and that of the vertical rolls 131.9 revolutions per minute. The screw-down motor operates at 550 revolutions per minute and the screw speed is 34.4 revolutions per minute. The screw pitch is ¾ inch. The maximum width of plate that can be rolled on this mill is 18 inches, minimum 4 inches, and the maximum thickness of slab 6 inches.

The steel for this universal mill is made in a 40-ton basic open-hearth furnace, the sulphur and phosphorus contents not exceeding 0.03 per cent. The product is particularly adapted for stamping, deep-drawing and cold-rolling processes.

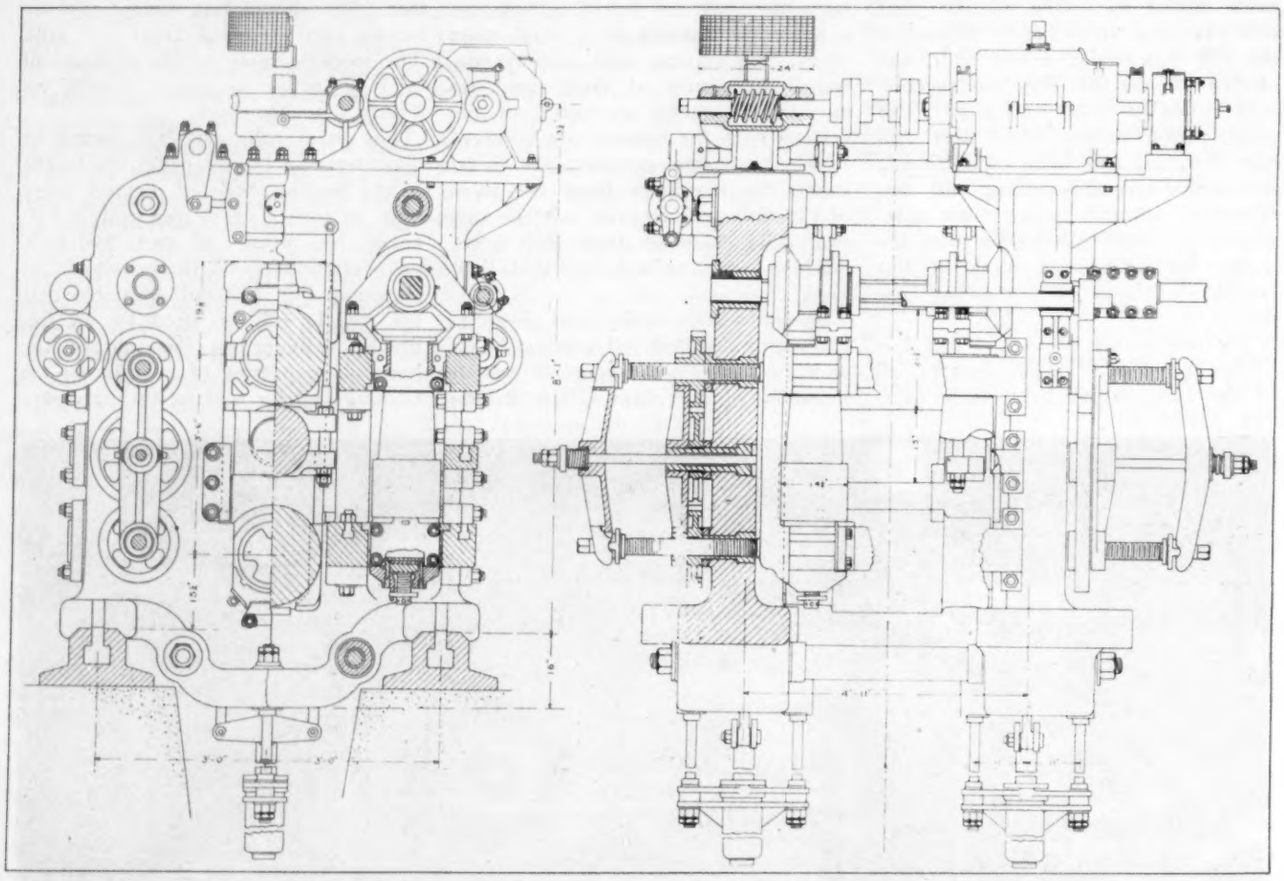


FIG. 2—END AND SIDE ELEVATIONS OF 21-INCH THREE-HIGH UNIVERSAL MILL

## Control Test of Pontoon Cranes

Two 150-ton pontoon cranes recently were built for the United States navy department by the Wellman-Seaver-Morgan Co., Cleveland. The cranes are for service in the Boston harbor and the Pearl harbor, Honolulu. They will be used for transferring to lighters and for handling turrets, guns, boilers and other machinery and equipment used on battle ships. The two tests made by navy department engineers and noted herewith are an indication of the accuracy of control provided by the magnetic type controllers installed by the Cutler-Hammer Mfg. Co., Milwaukee. To test the nicety of landing a heavy weight, the latter was suspended over an empty oil can with a block on top of it and then lowered so as to strike the block, being stopped upon signal. It was found possible to stop the load without injuring the oil can or deforming it. A further test was made, the weight having been suspended about two inches over the block and it was then lowered to see how close it could be brought without touching. It was found that the weight could be lowered within 1/16 inch of the block by the control apparatus.

# IRON AND STEEL MARKETS

# Production of Many Mills is Sharply Reduced

*And Large Numbers of Workingmen Are Dismissed—General Slackening of Demand—More Irregularity of Prices—Storm in Central West Disturbs Operations*

BY GEORGE SMART.

Gradual decline in demand for iron and steel products is causing very decided reduction in working forces, especially in eastern and Pittsburgh districts. At Pittsburgh, men are being laid off by hundreds. It is understood that one large independent company has added 2,000 to the idle list, while another has let out 1,000 men. On the ore ranges, the mining forces are also being reduced, and in some cases this is being done to a greater extent than ever before at this time of the year. Reduction of wages of working men is being considered at numerous plants, but except in the case of the wages of puddlers, which are adjusted according to a bi-monthly settlement, no reductions are reported. It is understood that the Steel Corporation is very much opposed to any reduction of wages and will not make any at its plants. The settlement of representatives of the Amalgamated Association and the Western Bar Iron Association has resulted in the reduction of the wages of puddlers to $6.40 a ton for boiling during November and December, a reduction of 60 cents, compared with the rate of the four preceding months. The average realized price of bar iron declined $3 a ton for September and October, as compared with the two preceding months, the decline being the greatest in a number of years.

**Reducing Costs**

One of the expedients resorted to to reduce cost is the abandoning of the duplexing process at Steelton. This process, being an all-pig iron method, is not cheap, but its increased production compensates for increased cost when the market is active. Now, however, with a spread of about $3.50 between basic pig iron and heavy melting steel in the east, manufacturers are reducing their costs by returning to the use of scrap. Dealers in old material will be glad of any development which promises increased demand for scrap, on which prices are extremely low.

**Pig Iron**

In eastern territory the best feature of the pig iron market is the continued demand of consumers for prompt shipment. In western territory, the melt of the foundries is declining. The stocks of furnaces in the Eastern Pig Iron Association in October showed a loss. There was also a decline in aggregate orders. A similar condition was shown among Virginia furnaces. The principal selling in the eastern territory was 8,000 to 10,000 tons of standard low phosphorus and Bessemer to the Midvale Steel Co., by the Bethlehem Steel Co. and the Delaware River Steel Co. The price of standard low phosphorus pig iron is being reduced to about $21.50 to $22, Philadelphia, to meet the low prices quoted on English hematite, but no sales have been made at the new price. English foundry iron continues to decline, but the lowest price which seems at all practicable is at least 50 cents higher than the price at which the domestic product can be obtained. Southern pig iron is lower and there is strong evidence that some furnaces are soliciting business at $10.50, Birmingham, for No. 2, and $10.25 for basic. Ironton iron is quoted at $13.50, furnace.

**Effects of Storm**

The storm which swept over the central west with the district between Sandusky and Erie as the region of greatest intensity, has almost brought manufacturing to a standstill. All the furnaces in the Cleveland district are banked, largely on account of shortage of coke. Mill operations are also seriously curtailed and foundries are already beginning to order suspensions of shipments of pig iron on account of inability to keep up the melt. The loss of life and property on the Great Lakes is heavy and the shipment of ore this month will be considerably reduced.

**Structural Material**

Structural awards of the week were not numerous, the most important being 5,000 tons for the Statler hotel, Detroit, taken by the American Bridge Co. The contract for a smelter in Alaska, 2,400 tons, has finally been placed with the Kansas City Structural Co. Large tonnages for subway and elevated construction in New York City are pending. There is considerable resistance to declines below 1.30c, Pittsburgh, on shapes, but 1.25c, Pittsburgh, is occasionally done. On plates, 1.25c is common.

**Sheets and Bars**

Blue annealed sheets No. 10 are reguarly quoted at 1.50c, Pittsburgh, but this price has been shaded $1 per ton for eastern shipment. The demand for sheets is extremely limited. The usual quotation on steel bars is 1.30c, Pittsburgh, but buyers claim that this could be shaded on desirable business. Bar iron is extremely weak.

**Warehouse Prices**

Warehouse prices on shapes, plates, sheets, steel bars and bar iron have been reduced $2 per ton at Chicago and St. Louis in harmony with recent reductions in Cleveland and Cincinnati. Warehouse business, which until recently has been fair, is less active. It would not be surprising to see still further reductions.

# Workers Being Laid Off at Pittsburgh

## *Plants Operating at Greatly Reduced Rate—Pig Iron Soft and Coke is Weaker—Scrap Very Dull*

BY C. F. WILLIAMS

Office of THE IRON TRADE REVIEW,
2148-49 Oliver Bldg.,
Pittsburgh, Nov. 11.

Continued inactivity in the iron and steel trade is seriously affecting labor, as was predicted a week ago, and as mill managers are reducing production they are laying off large bodies of men in a great many instances. Plants in this territory are operating at between 50 and 80 per cent of capacity, but outputs will be further restricted before the end of the month. In-coming business last week was lighter than during any six-day period the past 24 months, and it generally is conceded that conditions will not improve until early spring. The heavy fall of snow last Sunday demoralized telephone and telegraph service and mails have been delayed to such an extent it is impossible to compare the first two days of this week with those of last. Steel bars, which firmly stood at 1.40c despite softness recorded by plates and shapes, have dropped to 1.30c, but continue to command about $1 a ton more than plates. Pig iron prices remain soft and coke has reflected additional weakness. The iron and steel scrap market is decidedly dull, and prices have fallen off from 25 cents to $1 a ton. Despite discouraging conditions, prominent officials feel certain that the market will regain its position of a year ago by spring.

**Pig Iron.**—The N. & G. Taylor Co. has bought 1,000 tons of basic for shipment to Cumberland, Md., from a valley furnace at about $13.25, and that figure continues to represent the minimum quotation for basic. Bessemer is held at $15.25, valley. Quotations for foundry and malleable are nominal, as prices have not been tested for several weeks. McKeefrey furnace, at Leetonia, O., will go out of blast within the next 10 days.

### Puddlers' Wages Cut

The bi-monthly wage settlement took place yesterday at Youngstown, O., between representatives of the Western Bar Iron Association and the Amalgamated Association of Iron, Steel and Tin Workers. Examination of the bar iron sales sheets showed a 1.35c card for November and December. This compared with a 1.50c card developed by the examination of Sept. 12. The 1.30c card entitles the puddlers to $6.40 a ton, this being a reduction of 60 cents a ton for puddlers from the previous basis and 6 per cent decrease to the finishers.

This puddling rate does not directly affect any Youngstown puddling mills for the first time since the autumn of 1878 when the Amalgamated Association was first formed. This is because no mills now operating in Youngstown are affected by the Amalgamated scale.

The various mills and steel plants at Youngstown are operating, although the storm has torn down all wires, leaving no wire communication possible to the outside world. All the mills of the Republic Iron & Steel Co. are running except the 8, 12 and 20-inch mills at the Brown-Bonnell works, which are idle for lack of orders.

Eight sheet mills are idle at the East Youngstown plant of the Youngtown Sheet & Tube Co.

### Delayed by the Storm

*Owing to the great storm which prevailed, beginning Sunday night, Cleveland was almost entirely without wire communication for the first three days of the week, and mails from all sections were much delayed. Hence the market reports for this issue were collected with great difficulty, and in some cases have been curtailed, but it is believed that no important item has been overlooked, as all leading centers have been heard from.*

### Will Make Doors and Rims

The Empire Art Metal Co., Inc., which recently was incorporated with a capital of $250,000 in New York City, now is constructing a one-story plant of frame construction to occupy one square block at Eighth and Ninth streets, Second and Third avenues, College Point, N. Y., for the manufacture of hollow steel doors and interior trims. It is expected that full operations will be started within the next few weeks. John W. Rapp, who recently severed his connection as president with the United States Metal Products Co., and is the pioneer in the development of interior metal fireproofing, is president of the new company. A. J. Connell, who formerly was in charge of the sales department of the United States Steel Products Co., is vice president, and Wm. C. Lange, who had been the cost accountant and purchasing agent for the same company for the past 13 years, is secretary. The plant will be equipped with the most modern types of machinery for fabricating hollow steel doors and trim finishing in any desired finish, such as mahogany, oak, Circassian walnut, etc.

## IMPORTANT POINTS

**Decided in Federal Court in Labor Dispute Cases.**

In two decisions in labor disputes returned in the federal district court at New York City last week, are included an important interpretation of existing laws on the question of open and closed shops. In the suit of Irving G. Casson, wood workers, Cambridge, Mass., against the United Brotherhood of Carpenters and Joiners and the Amalgamated Society of Carpenters and Joiners of America, and their members, Judge Henry G. Ward held that a combination formed by a body of workmen to enforce the principle of the union shop upon an employer operating an open shop is illegal, because it restrains competition, and he issued a permanent injunction to the plaintiff. Judge Ward held that workmen have a right not to work for any reason they chose, but that it does not follow they have a right to combine to do so over the whole country because such a combination results in directly restraining competition between manufacturers. The plaintiffs in the action had contended that their business was unfairly discriminated against by their name appearing upon the unfair lists of the labor organization.

In a suit of somewhat similar character, brought by the Paine Lumber Co. and a number of woodworking mills in various states against the Carpenters' and Joiners' Union and a number of building contractors who had refused to handle non-union materials, Judge Julius M. Mayer held that this was an economic question and that the court had no jurisdiction and that no damage or acts of violence were involved.

The Conway-McLeod Foundry Co., Detroit, has changed its name to The Conway-McLeod Co. Capital is increased from $5,000 to $50,000.

# Fair Sales of Spot Pig Iron at Chicago

## *But Consumption is Decreasing—Prices of Finished Materials Irregular—Warehouse Prices Reduced at Chicago and St. Louis*

BY H. COLE ESTEP

Office of THE IRON TRADE REVIEW,
1521-23 Lytton Bldg.,
Chicago, Oct. 11.

**Pig Iron.**—Pig iron generally is inactive except that there are fair sales of northern foundry and malleable for immediate shipment. Foundry consumption is diminishing and many consumers will have enough iron in this year's contract to run to first quarter. Southern foundry iron is weaker, being freely offered at $11 for first half.

Warehouse prices have been reduced $2 per ton at Chicago and St. Louis.

**Merchant Bars.**—New buying has reached a very low ebb, consequently prices are exceedingly uncertain. The nominal quotation on steel bars is 1.48c, Chicago, equivalent to 1.30c, Pittsburgh, but this figure could undoubtedly be shaded to 1.45c, Chicago, without great difficulty. Hoops and other bar mill products are quoted at proportionate figures. The implement manufacturers in some cases are afraid that the spring trade will be light and are therefore very cautious about specifying. In many cases buyers with considerable tonnage under contract are covering their requirements in the open market at figures less than those named in their contracts. Specifications consequently are very sluggish. The warehouses are doing only a fair volume of business. Store prices were reduced $2 a ton Nov. 7 on soft steel bars and hoops. Shafting is still quoted at 55 per cent off for less than carloads.

**Plates and Structurals.**—Mill prices on plates have settled down to 1.25c, Pittsburgh, although a fair run of small orders is being booked at $1 a ton higher. On the ordinary run of structural business, the mills are quoting 1.48c, Chicago, but this figure could be shaded by a shrewd buyer. Fabricating contracts are scarce and few that are now being considered call for over 600 tons each. There has been a general reduction of warehouse prices on plates and shapes, the new quotation being 1.85c, Chicago. It is not expected that this change will have much effect on the volume of business; the prices were reduced to meet the reduction in mill quotations. Mills in this territory that buy small rolling billets report their ability to practically name their own prices. Offers as low as $21, Pittsburgh, have been received. The local mills are offering practically immediate delivery on plates and shapes of all sizes.

**Rails and Track Fastenings.**—The rail market is devoid of new developments. The report that the St. Paul is negotiating for its 1914 requirements is officially denied; nevertheless it is believed that the subject has been given some informal consideration by the railroad officials. Lower prices on track fastenings have not brought out any additional business. The demand for light rails is fair, but the competition from mills rolling from old stock is keen. Rail inquiries are under consideration from the Illinois Central, the Santa Fe and Louisville & Nashville.

**Bolts, Nuts and Rivets.** — The amount of business available is not sufficient to more than half supply the plants in this territory and prices are therefore in a very shaky condition. Although 1.90c, Chicago, is the open quotation for structural rivets, the market is in reality almost entirely in the hands of the buyers. Specifications are light.

**Sheets.**—In this territory there are no reports of sales under 2.18c, Chicago, for No. 28 black and 3.18c for No. 28 galvanized. The volume of business, however, is hardly sufficient to test the situation, and with sheet bars steadily declining there can be no stability to the price of the fully finished material. Business is only moderate, although both jobbers' and manufacturers' stocks are very low.

**Wire Products.**—The usual run of fall business in wire from the agricultural regions of the west is practically at an end and inasmuch as jobbers are not disposed to build up their stocks for spring trading, activity is at a minimum. Orders from manufacturers are numerous in number but moderate in tonnage.

**Cast Iron Pipe.**—With the foundries stocking most of their production, prices are irregular and offers of desirable tonnages would undoubtedly bring out figures very attractive to the purchaser. There is a fair amount of routine business. Up to date, the usual early winter demand for gas pipe has not appeared.

**Merchant Pipe and Tubes.**—In this market iron and steel pipe is selling at about the same rate as has been maintained for several weeks. Some dullness due to the season of the year is apparent. The demand for seamless tubes is comparatively light and mills in this territory are operating on reduced schedules.

**Old Material.**—Further declines in the price of wrought iron have taken place in the Chicago market. No. 1 railroad wrought is now down to $9 per net ton, f. o. b. Chicago, and on No. 2 it is probable that $8 could be shaded. Steel car axles are also lower, being quoted at $13 per net ton. The railroads have been offering considerable material lately which partly accounts for the low prices on rolling mill grades. The Chicago, Milwaukee & St. Paul R. R. Co. sold 1,710 tons on Monday, including 500 tons of steel rails and 200 tons of frog, switch and guard rails.

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## Eastern Steel Co.'s New Manager of Sales

Lorenzo C. Dilks has been made general manager of sales of the Eastern Steel Co., Pottsville, Pa., with headquarters in New York City, a newly created position. He has been contracting manager in New York City for several years. R. W. Tull, who has been assistant contracting manager of the company at New York City, has been promoted to contracting manager, and C. F. Fay, who has been associated with the New York office, has been made sales agent in charge of plain material sales in that territory.

Mr. Dilks came to the Eastern Steel Co. in 1905, as contracting manager in New York City, after having served for two years as manager of the Buffalo plant of the American Bridge Co. Prior to that time, he had in turn been assistant to the vice president of the engineering department and assistant to the president of the American Bridge Co. Before that, he had been one of the assistant engineers of the Pencoyd plant of the American Bridge Co., where he gained his experience as draftsman in 1893. Mr. Dilks was born at Montau, N. Y., May 21, 1875, and received his education in the public schools of Philadelphia and through private tutors. He is a member of the American Railway Engineering Association, the American Society of Civil Engineers, the American Society for Testing Materials and the American Iron and Steel Institute. His business address is 60 Broadway, New York City. His residence is at Cranford, N. J.

# Business Paralyzed by Cleveland Storm

## *Ore Operations Checked—No Mail at Sales Offices —Reports of Lower Prices Not Always Confirmed*

BY GEORGE SMART.

Office of THE IRON TRADE REVIEW,
Penton Bldg.,
Cleveland, Nov. 18.

**Iron Ore.**—The great storm which embraced the whole lake area, prevailing generally from Saturday until Monday, has demoralized the ore trade and has thrown the whole fleet back fully a week. Vessels generally did not put out in it and work at both loading and unloading docks was in a state of comparative suspense. The casualties resulting from the storm are dealt with elsewhere in this issue. The high wind lowered the water in the locks at Sault Ste. Marie and also blew it out of the channel at the mouth of the Detroit river, so that vessels were compelled to remain at anchor in the rivers. The net result of the storm, in so far as the ore trade is concerned, is that vessels will carry one less cargo than was expected. The general program of the shippers to close early will not be changed. The Pittsburgh Steamship Co. has retired all of its barges and shippers will be through with outside tonnage during the present week. Shippers will be through with their own ships by the end of next week and little or no ore will be moved after that date. The season's total movement will be somewhat over 48,000,000 tons.

**Pig Iron.**—If the condition of the pig iron market could have been made duller by anything, it has been done by the storm, which has paralyzed business in all lines in this city. The consumption of foundries will be sharply reduced and some report that they will not be able to resume activities fully for a week. Hence there have already been some requests for suspension of shipments of pig iron, and doubtless many others will come.

**Coke.**—The scarcity of coke is the principal reason for a number of furnaces in Cleveland being compelled to bank their fires following the storm which started Sunday. Every possible effort will be made to renew deliveries, so that furnaces can resume. There is no buying at present, and all efforts are being directed toward getting shipments started.

**Finished Materials.**—As Cleveland has been almost completely isolated since Sunday, mails have been so small that even the limited forces reporting for duty at the various sales offices found trouble in keeping themselves busy, and practically no business was transacted Monday and Tuesday in any of the offices. At the warehouses, the few workmen on hand were employed in shoveling snow and no sales were being made or deliveries attempted. Since the announcement of the new price on tin plate, there has been some inquiry and buyers seem to be getting ready to place their orders, but no actual buying is reported. The Empire and Union rolling mills are idle this week for lack of orders, as well as on account of the storm. The bar mill of the Upson Nut Co. is also out of commission. Many reports of lower prices on finished materials have been current, but most of them lack confirmation.

**Old Materials.**—The condition of stagnation which has existed in the scrap market lately was intensified by the stormy weather during the past week. No scrap is moving, owing to the tie-up on the railroads and the covering up of yard stocks by snow. Dealers say the present lapse in business may result in the steadying of prices. However, most of the mills consuming scrap have been partly or altogether closed down during the early days of the week and it is not likely that the situation will be much changed when normal conditions prevail. Prices are unchanged from last week.

## SERIOUSLY CRIPPLED

### Cleveland Industries Almost Paralyzed by Storm.

Stricken by tempest, snow and ice, with the accompanying disruption of steam and street railway traffic and wire service, Cleveland's iron and steel trade lies for the most part in a comatose state. The most serious factor in the situation is the shortage of coal supplies. Some plants are already badly affected; many others have only a few days' store and, unless the railroads are able to operate shortly, they will have to shut down. There is another great impediment experienced in the impairing of the telephone and telegraph systems; communication has been cut off between many plants and offices and business is conducted with difficulty.

Thousands of employes, workers in mills and offices, have been unable to get to their places of business. One large downtown office, ordinarily humming with the activities of scores of officials, clerks and stenographers, was occupied solely by an office boy on Monday. The immediate outlook is not promising. While the storm has abated, transportation facilities and equipment are in a bad tangle and it may be a question of several days before railroads can handle trains and switching.

The blast furnaces of the Cuyahoga works of the American Steel & Wire Co. were banked Sunday night, and most of the other works of the company were closed Monday and Tuesday. The company has little coal and is preserving what it has for protection in case of fire.

The mill furnaces of the Cleveland Steel Co. were banked all day Monday and Tuesday, owing to lack of railway facilities and inability of employes to get to work. Officials of the company state their business at present depends upon the Lake Shore railroad and the Cleveland Electric Street Railway.

The Cleveland Hardware Co., Lakeside avenue and East Forty-fifth street, was fortunate in that many of its employes live in the locality of its plant. It has coal sufficient to last several days. No. 2 plant of the company is not so well situated, but details are unobtainable, because of broken telephone wires.

The Lake Erie Iron Co. seems to have been one of the most fortunate of Cleveland plants during the storm. Its men turned out well and it has a good supply of coal.

The Cleveland Furnace Co.'s stacks were banked Monday and Tuesday. The scarcity of coal also has affected this company to some extent.

The Upson Nut Co. plant was operated only part of the day Monday. The blast furnace was banked Tuesday morning. Officials report a shortage of coke but state they believe conditions will be normal before the end of the week.

The plant of the Co-operative Stove Co., on Central avenue S. E., was slightly damaged Monday by the collapse of a wall and fire in the foundry.

Farnan's Brass Works sustained slight damage in the fire which swept the Weiss-Kropf Co. plant, on Merwin street, Sunday.

The Lakeside plant of the Otis Steel Co. was closed Monday.

# Lower Prices for Southern Pig Iron

## *Quoted in the Cincinnati Market—Ironton Product Also Being Offered at Low Prices—Coke is Very Weak*

BY S. G. BACKMAN

Office of THE IRON TRADE REVIEW,
503 Mercantile Library Bldg.,
Cincinnati, Nov. 11.

**Pig Iron.**—Continued dullness in the pig iron market has caused it to become somewhat uncertain as to minimum prices, especially on southern No. 2 foundry iron. Reports of this grade to be had below $11, Birmingham basis, for first half shipment are rather frequent, but are hard to verify owing to the fact that nothing has transpired recently upon which they could be based. However, there is every reason to believe that more than one southern furnace has lately been soliciting business as low as $10.50 and $10.75, Birmingham, for fair sized tonnages, with delivery to extend into the first half, but it is not known that any sales have been made at this figure. The general quotation is probably $11, Birmingham, for delivery through the first half, and includes both Alabama and Tennessee makes. One Tennessee furnace has advised that it has no more iron to sell for this year, which is also true of two of the larger Alabama stacks. Several Alabama furnaces also state that they are shipping out iron faster than it is being made, and it is generally known that Birmingham furnaces, up until Oct. 1, were gradually reducing stocks in their yards, and they may probably still be doing so. The outlook is very problematical and the uncertainty that prevails here at the present time makes any definite statement or prediction almost impossible.

Although furnaces in southern Ohio are still quoting $14, Ironton, for southern No. 2 foundry iron for first half shipment, several sales have been made recently as low as $13.50, Ironton, for delivery into the first half. Basic iron from this territory and also from the south, does not appear to be as strong as foundry iron, and it is reported is sometimes being solicited at lower figures, that from the south being offered at $10.25, Birmingham, in certain cases.

The market has probably not been any duller in years than it is at the present time. The only prospect before local dealers is 1,500 tons of assorted grades at Ft. Wayne, Ind., which is expected to be closed today. One of the furnaces of Globe company, at Jackson, O., has been blown out for relining, and will probably not be relighted before the first of the year.

**Coke.**—The coke market is probably weaker at present than it has been for over a year and a half. There are practically no live inquiries before dealers here, and transactions during the past week have been very light. Demand and consumption appear to have fallen off to such an extent recently, that both are now below production in practically all of the fields. Prices in the Connellsville region are not as strong as they were last week, and furnace coke from there can now be had at from $1.80 to $2 per ton for spot shipment, and at from $2 to $2.25 on contracts. Quotations in the other fields are unchanged, but rather weak. There is a shortage of cars in all of the fields except in the Connellsville district, where only open cars are plentiful. Box cars are scarce everywhere in reference to the shipment of coke, all of which, in connection with the lack of sales, has caused quite an amount of coke to accumulate around the ovens.

**Finished Material.** — Specifications have been better with the local sheet mill during the past week than for some time, which is attributed to the fact that there are still a few dealers left in this territory who have not as yet covered for winter requirements and are now in a hurry to do so. The mill is now from three to four weeks behind on deliveries. Prices are rather uncertain and reports from outside territories indicate that they are a little weaker, but mill prices here are fairly firm at from 2.15c to 2.20c on black sheets No. 28 gage and from 3.15c to 3.20c on galvanized sheets No. 28 gage, f. o. b. Newport, Ky., and Cincinnati.

Warehouse business is not very good and indications are that prices will be lowered within the next few days. They are, however, at present unchanged from those of last week, when a slight reduction was experienced on steel bars, iron bars and plates and shapes. It is reported that warehouse prices in Chicago have recently been reduced $2 a ton and it is very probable because of this that Cincinnati dealers cannot hold at the present level. Not much business has been done during the past week and there seems to be no special demand for any one grade carried by local warehouses. Sheets are probably the strongest and have now remained unchanged in price for several weeks.

**Old Material.**—Users of scrap still decline to show any inclination of buying in anything but very small lots, as requirements actually demand, and the market therefore remains very dull and weak, which condition has existed for a long time. Both buyers and sellers have disregarded any general level of prices and practically all quotations on all transactions are being made regardless of those involved in other sales. As a result, some very low prices are being made from time to time, depending entirely upon the conditions regarding the transactions. The outlook for a betterment is not very encouraging, as there is a large surplus of scrap both in dealers' yards and available throughout this territory.

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The J. K. Hinkle Mfg. Co., Mechanicsburg, Pa., maker of wheels, spokes and rims, advises it has bought a plant from the F. Seidel state, the Seidel & Hinkle plant and the J. K. Hinkle plant, the latter in Dillsburg. Officers are: President, J. K. Hinkel; vice president, H. A. Shriver; treasurer, E. L. Stansfield. The officers and I. G. Hinkel and M. L. Kutz are directors.

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The regular election night party of the Newark Foundrymen's Association took place Tuesday evening, Nov. 4, at the Globe Theater, New York City, where a score or more members witnessed the production of the "Doll Girl". Preceding the theater, a dinner was served at the Cafe De Paris.

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Estimates received for the power plant piping to be used in the new municipal hospital now being built in Cincinnati, show the Henry Casey Co., of Chicago, to be the low bidder at $41,000. The contract has not been let, but this will probably be done within a few days.

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The Savage Tire Co., San Diego, Calif., advises it has completed the foundation and basement of an addition to its plant. The factory now turns out daily 400 pneumatic tires, 400 inner tubes and 100 steel tires, being the first concern west of Chicago to make this product.

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The D. L. Bates & Bro. Co., of Dayton, O., manufacturer of electrical machinery, has filed a voluntary petition of bankruptcy in the United States district court. The company lists its liabilities at $13,826.46, and its assets at $5,076.29.

# Some Talk of Wage Cuts in the East

## *But No Action Taken—Market Fails to Respond to Lower Prices — Prices Generally Irregular*

BY C. J. STARK

Office of THE IRON TRADE REVIEW,
326 Real Estate Trust Bldg.,
Philadelphia, Nov. 11.

As the eastern market fails to respond to lower prices, makers find themselves obliged to adjust operations to reduce costs. The low scrap market offers an exceptional opportunity for doing this and mixtures are being rearranged accordingly. Duplexing at Steelton and at other points is being given up temporarily. There is some talk of labor adjustment, but no action has been taken in this line. With some large eastern makers, unfilled tonnage has dropped back to the level of early in 1912, and is still shrinking. New business is at a minimum, buyers declining to buy ahead either in crude or finished materials. Pig iron stocks fall, however, under the current melt. Prices generally lack firmness.

**Pig Iron.**—Consumption in this territory still gives a good account of itself and furnace stocks continue on the down grade. Consumers generally insist upon prompt deliveries and the output of the district as recently curtailed appears to be below the current melt. This is the best feature of a monotonous market. Reports for October to the Eastern Pig Iron Association show a fair reduction in stocks and also a decline in orders. Active furnaces decreased one. A similar situation was shown in Virginia. The market still manifests a lack of forward buying. The principal purchase in the week was 8,000 to 10,000 tons of special and standard Bessemer taken from Pennsylvania makers by a steel maker in this district for delivery through January. The standard Bessemer went around $16.50, delivered, and the special phosphorus metal considerably higher. This buyer was recently quoted about $19.50, delivered, on foreign iron of the latter quality. As expected the standard low phosphorus market is being reduced by domestic makers $1.50 to $2 a ton or to about $21.50 to $22, Philadelphia, to meet the lower prices offered on English hematite. No sales are reported, however, at the new price. Basic remains inactive with prices more uncertain. Some makers of foundry brands seek to hold a flat price of $15, furnace, on No. 2X, or slightly lower grades, but certain furnaces will accept at least 25 cents lower. This places the Philadelphia market at about $15.50 to $16 for No. 2X. A Trenton radiator manufac turer took 1,000 tons of No. 2 plain at about $15.25, delivered. A pipe maker still negotiates for 6,000 tons of low grade iron. Small sales of Virginia iron are going at $13, furnace, for No. 2X, but it is indicated this price can be shaded. The leading Virginia maker has put out a schedule of $13 for No. 2X and $12.75 for lower grades for first quarter. Merchants abroad this week solicited offers of 58s, Philadelphia, for No. 3, Middlesbrough, and $14.10 on docks, which, with sellers' profit, incidentals and freight would mean about $15.75 to $16 in the Philadelphia consuming district. Even could this offer be put through, which is not certain, as it is the lowest yet solicited, the iron remains 50c to $1 out of line. Developments indicate that a consumer dealing direct now surely can do $14.50 on docks here.

**Iron and Steel Bars.**—Not enough business is moving in steel bars to prove the market. Some large buyers report they do not intend to purchase under present uncertainties. Makers freely quote 1.35c, Pittsburgh, or 1.50c, Philadelphia, but it is not established that this is a firm level. Specifications are slow. Bar iron is weak, and it is reported 1.20c, mill, can be done. Some mills quote considerably higher.

**Plates.**—Some good-sized inquiries are before eastern plate makers. Bids have gone in on 8,000 tons for sections of the New York subway closing this week. A lot of 6,000 tons of structural plates for a railroad is before makers, as well as 2,500 tons for prospective vessel construction. New tonnage does not expand and small orders prevail. The price range regularly quoted by eastern makers is 1.30c to 1.35c, Pittsburgh, and the former level is appearing freely. Down to 1.25c, Pittsburgh, has also been done by certain mills in this district. Mill operations in the east are about 65 to 75 per cent. The Norfolk & Western railroad, it is understood, is contemplating building 500 cars in its own shops in addition to 1,000 cars recently provided for.

**Structural Material.**—There is considerable talk of more resistance to declines below 1.30c, Pittsburgh, being made by makers of shapes, but cases where 1.25c, Pittsburgh, or 1.40c, Philadelphia, has been quoted, continue to be shown. It requires usually a record tonnage to bring out the minimum, and smaller lots are being closed at 1.30c, and even 1.35c, Pittsburgh. New bookings remain relatively small and the tapering off of mill output continues. Fabricators and contractors are withholding purchases.

**Sheets.**—Blue annealed sheets No. 10 gage are regularly quoted 1.50c, Pittsburgh, or 1.65c, Philadelphia, but this price has been shaded about $1 a ton. The leading maker in this district continues to operate all its mills.

**Semi-Finished Steel.**—No new inquiries for billets of size are pending and the market is quiet. Prices are soft. Eastern makers quote rolling billets from $23 to $24, delivered. Pittsburgh makers will do $21, Pittsburg, or $23.40, this district. Forging steel is $28 to $29, this district.

**Old Material.**—With heavy steel much below pig iron, scrap portions of mixtures are being increased, as steel makers find it necessary to pare costs and cut output. At Steelton, duplexing has been temporarily discontinued. The market in scrap still slumps. Merchants are paying $10.75, delivered, on old orders for steel. October's railroad lists brought $10.60 to $11, delivered for steel, mostly the latter. Car wheels went over $12, delivered. Wrought scrap is a drug on the market, and now cast, which has been active, is easier.

## Lake Erie Ore Receipts

Out of a total shipment of 6,521,884 tons of iron ore during October, 5,213,353 tons came to Lake Erie ports, distributed as follows:

| Port. | Gross tons. |
|---|---|
| Buffalo | 685,042 |
| Erie | 136.397 |
| Conneaut | 1,166,031 |
| Ashtabula | 1 035,970 |
| Fairport | 136 319 |
| Cleveland | 1,213,532 |
| Lorain | 468,448 |
| Huron | 112 140 |
| Sandusky | ..... |
| Toledo | 160,018 |
| Detroit | 99,456 |
| Total | 5,213,353 |

The Lombard Machine Co., Worcester, Mass., has been incorporated with capital of $25,000, to carry on the business formerly under a partnership. Carding machinery is the output. The business has been removed from Leicester, Mass., to a factory in Worcester. Officers are: President, Burt J. Moran, Worcester; treasurer, James J. Rae, Leicester.

# Large Reductions in Finished Materials

## *In the British Market—Some Increase in Buying of Pig Iron—Continued Idleness of Steel Foundries*

Office of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., Nov. 1.

**Pig Iron.**—There has been some increase of buying this week, solely because so many contracts ran out. Practically everybody is wanting iron but purchases have been strictly for immediate needs, confidence being insufficient to encourage forward buying. The quotation for Cleveland iron yesterday was 51s 3d ($12.54) with 51s 6d ($12.60) one month, and 52s ($12.72) three months. The total in store is 158,000 tons, but it is believed this does not correctly represent the position, as iron is known to be accumulating in makers' hands in the Cleveland district. Buyers are making a strong effort to fix prices at least 1s (24c) below market quotations. There are still a few optimists who look to American markets to bring a certain amount of custom. It is thought the outlook is slightly more promising, and, in the Sheffield district, there has been much more inquiry, although no great amount has materialized in actual business. The position of hematite makers has strengthened a good deal owing to the reduction of output, and no further concessions have been obtained. In the Sheffield district, the continued idleness in the steel foundries, owing to a strike of molders, has affected the pig iron market. A number of makers of forge iron have ceased to quote, as they prefer to put their iron into stock, rather than sell at present figures, but there is still a little cutting by some makers. Lincolnshire official prices have been cut by 1s (24c), the recognized quotation being 58s 9d ($14.38). Apparently, the Midland market is stronger than the Northern, and prices this week have been very steady. There is a growing belief that minimum figures have been reached, and, consequently, there is more inquiry for future supplies. Some of the furnaces are still fairly well provided with business to the end of the year, and, by that time, they hope to make fresh contracts. Even including Cleveland, the amount of pig iron going into stock is not large, and is quite insufficient to force down prices. Mixed numbers east coast hematite are quoted at 54s 3d ($13.28). The foundries continue fairly busy, and the demand for foundry iron has very much assisted to maintain the comparative firmness of raw material. Cleveland prices are now lower than they have been since the middle of March last year. The shipments for October have exceeded 20,000 tons, and warrants have been reduced by 8,000 tons. In the Barrow district, the 25 furnaces in blast, practically all for steel making iron, manage to sell their output.

**Finished Iron and Steel.**—In the finished iron and steel trade the event of the week has been a reduction of amounts varying from 5s ($1.22) to 10s ($2.44) per ton in English steel. This makes angles which have been reduced 10s ($2.44) £6 10s ($31.58) as compared with £8 ($39.18) at the beginning of August. The Scottish lead was quickly followed on the northeast coast, and Midland and Welsh makers had no alternative but to fall into line. Joists, which are controlled by a separate association, are unchanged at £6 15s ($33.06), but an early reduction is expected. It is hoped the sweeping change will now bring out some business which is known to have been pending. Opinions vary a good deal as to the wisdom of the course adopted. Structural engineers would have preferred that the 30s ($7.34) reduction had been at a sweep, as the repeated nibbling at prices is checking business in all directions. Some makers, on the other hand, criticize the last reduction as unnecessary; but it was "Hobson's choice", the northern makers, especially in Scotland, being driven off their feet by heavy continental imports. For the present, unfinished steel is substantially unchanged, and makers claim to have led the way by the reduction made before makers of finished steel yielded to the inevitable. Steel bars are reduced only 5s ($1.22) per ton. The comparative firmness of British unfinished steel is remarkable, in view of the heavy influx from Belgium and Germany, which reached its climax at the Birmingham meeting on Thursday, when large quantities of German billets were bought. This is due not only to tempting foreign prices, but to the severe restriction by continental sellers to the end of January, as the period for which they will undertake delivery. Continental makers have a firm belief in a New Year's recovery, and are regulating their arrangements accordingly.

A shortage of work in the heavy steel branches of Sheffield has produced some underselling in acid billets. The railroad tire department is busy, but Belgium makers of axles have largely captured the British market, and some of the axle makers are almost idle; but a very useful order has been received from India, and other business of the same kind is expected. While the armaments department shows no falling off in orders, a severe reduction of output must take place shortly; unless the molders' strike in Sheffield is speedily settled, there will be a stoppage for want of molds, as all foundries which produce them are now idle. At the present time, the Sheffield armor plate mills are producing plates for France, Russia and Italy, in addition to the British navy. Some useful business is also being secured for railway material for the New South Wales government.

There is a growing optimism, in view of prospective business. Russia has lately given signs of increasing demands upon British mills, and among recent bookings have been large Indian orders, placed with Middlesbrough firms. Some heavy demands upon British rail mills are expected to arise out of an extensive program of railway development coming out in South Africa.

In the west of Scotland hardly any of the works are making full time, largely on account of the severe competition from the Continent. It is calculated that over 6,000 tons of steel material is being landed every week in the Clyde from the Continental mills. It is said that this steel cannot be profitably made at such prices, but a number of finishing mills have benefited from this dumping windfall, which has enabled them to pick up a lot of contracts at very low prices.

The position of galvanized sheets becomes more unsatisfactory, prices this week having been reduced to £10 10s ($51.44) f. o. b., Liverpool. While this is a possible price for South Wales makers, it represents ruin to the few Midland mills still in the business, and one South Staffordshire firm has decided to cease production of galvanized sheets, restricting itself to more profitable kinds of iron and steel.

The tinplate trade continues extremely dull, and the only prospect of doing any business at all is dependent on the ability to force down the price of raw steel. Unless this can be done, many more mills must be added to the scores of those already idle. A great number of forward contracts are being refused at present prices by the Welsh makers.

## GOES BEGGING

### Foreign Ore Not Taken by Eastern Furnaces.

BY C. J. STARK

Office of THE IRON TRADE REVIEW,
503-4 West St. Bldg.,
New York, Nov. 11.

**Iron Ore.**—Some charters taken for the foreign ore trade to the Atlantic coast are now being reoffered in the market by shippers owing to their inability to place these cargoes with eastern furnaces. Ore consumers are reluctant to take in more than minimum tonnage at present. In one case, several cargoes of a certain foreign ore were summarily rejected, because its analysis fell below the specification required. The matter finally was adjusted by the furnace taking in the ore at a very low price, which, it is reported, barely covered the transportation cost. A second cargo of an engagement of Texas ore by an eastern Pennsylvania furnace is about to reach Philadelphia. The steamer Ossalaw has been chartered for the shipment.

**Cast Iron Pipe.**—Further advices received by American foundries, show that the 90,000 tons of 60-inch pipe and assorted sizes for a large water and sewer line in Buenos Aires, upon which bids were taken late in August, has been placed with German makers. The price is reported to have been between $31 and $32 c. i. f. Buenos Aires. A very large tonnage for this work, estimated at upwards of 100,000, still remains unplaced, but is being held up temporarily for financial reasons. R. D. Wood & Co. have finally been awarded 6,600 tons of large pipe for Atlantic City, N. J. The United States Cast Iron Pipe & Foundry Co. has taken 600 tons for the government at Panama. Bids go in this week on about 500 tons for the new Seventh avenue subway line. Business is of limited volume and prices are weak. Lower than $21.50, New York, recently has been done on 6-inch pipe.

**Plates.**—Bids will be received at Washington by the Navy Department on Nov. 20 for supply ship No. 1, requiring about 3,500 tons of steel, mainly plates, and for transport No. 1, requiring about 4,500 tons. Small sales largely make up the market in this district and makers readily obtain from 1.30c to 1.35c, Pittsburgh, equivalent to 1.46c to 1.51c, New York, usually the latter, on these orders. While there seems to be no doubt that 1.25c, Pittsburgh, could be developed on a very large order, nothing below 1.30c has come into evidence in this district.

**Structural Material.** — The usual price range of the New York market is from 1.30c to 1.35c, or 1.46c to 1.51c, New York. The smallest buyers usually pay 1.35c and this class of business is the most numerous at the present time in this district. Nothing has developed in this territory to bring out a price below 1.30c, Pittsburgh. New business remains relatively light.

Crocker Bros., Forty-second street and Madison avenue, New York City, have taken the exclusive selling agency in all territories for the Oriskany Ore & Iron Corporation, Lynchburg, Va., manufacturer of high manganese foundry pig iron. This iron was formerly sold by Kogers, Brown & Co.

The large No. 2 furnace of the Warwick Iron & Steel Co., Pottstown, Pa., which has been out of blast for some weeks, for repairs, now is in position to resume operations. In view of the unfavorable market conditions, however, this furnace may not resume until around the first of the year.

## STRUCTURAL CONTRACTS

### Are Not Numerous—Statler Hotel at Detroit Among the Awards.

A large tonnage of structural material for use in subway and elevated work, as given in an article elsewhere in this issue, is pending in New York, but new contracts are not numerous.

Fabricating contracts reported in the west total only 2,139 tons. The largest individual job calls for 616 tons. The larger companies are figuring on considerable work, but the aggregate steel requirements are comparatively light. Fabricators' prices indicate that the market on plain material is close to 1.25c, Pittsburgh.

#### CONTRACTS PLACED.

Statler hotel, Detroit, 5,000 tons, the American Bridge Co.

Three barges, the Union Sand & Machine Co., St. Louis, 500 tons, the American Bridge Co.

Store building, Washington, D. C.; first section requiring 800 tons placed with Phoenix Bridge Co.

Apartment for Brixton Construction Co., East Seventy-ninth street, New York City, 600 tons, awarded to Hinkle Iron Works.

Springfield, Mass., high school, 1,200 tons; general contract awarded A. E. Stevens Co., New York City. Steel work to be furnished by Levering & Gerrigues.

Kanawha bank building, Charleston, W. Va., 900 tons; general contract awarded to D. T. Nesbit Co., New York City. Steel work still pending.

Coaling station for government at Pearl Harbor, Hawaii, 2,000 to 3,000 tons; Concanon Bros., Seattle, low bidders on general contract. Steel work will go to American Bridge Co.

New Haven, Conn., post office, 900 tons; general contract awarded to Chas. McCaul Co., Philadelphia, but protest filed by E. M. Waldron & Co., Newark, who was low bidder originally.

Smelter for Alaska and Gastineau Mining Co., 2,400 tons, finally awarded to Kansas City Structural Co., as reported.

Terminal Arcade, Kansas City, Mo., 303 tons.

Heywood Bros. & Wakefield Co., structural steel for buildings, Chicago, 473 tons, to the American Bridge Co.

Board of Education, Lansing, Mich., administration building for normal school, Marquette, Mich., 360 tons.

Mount Wilson Solar Observatory, Pasadena, Cal., observatory dome, 616 tons, to Milliken Bros.

#### STRUCTURAL CONTRACTS PENDING.

Schiff apartment, Ninety-sixth street, West End avenue, New York City, 1,000 tons; bids asked.

Methodist office building, Toronto, 1,000 tons. Bids taken.

Warehouse of Havemeyer estate, Brooklyn, for Austin Nichols Co.; revised bids being taken. Originally figured to require 5,000 tons. Now being figured with Bethlehem sections and cast iron columns.

Astor loft building, Fifth avenue, New York City, about 1,500 tons; temporarily abandoned.

Building for Empire Life Insurance Co., Augusta, Ga., 1,800 tons; bids entered.

Emergency hospital, Washington, D. C., 400 tons; bids entered.

## RAILROAD BUYING

### Proceeds at Very Moderate Rate—Effect of Wage Decision.

Railroad buying of the past week has been at a very moderate rate. The action of the arbitrators in deciding to allow conductors and trainmen in advance amounting to about $7,000,000 is not expected to stimulate confidence in railroad conditions, but to have the contrary effect, especially in view of the fact that the railroad rate case is not to be decided before spring.

Aside from inquiries for 1,000 freight cars from the Toledo, St. Louis & Western, and 500 car bodies from the Wabash, which have been pending for some time, there is very little business of importance under negotiation in the west. The car plants in the vicinity of East St. Louis are operating at about 70 per cent capacity.

#### CAR AND LOCOMOTIVE ORDERS.

Pennsylvania railroad has placed 1,000 coke cars with the Cambria Steel Co.

The Louisville & Nashville railroad is inquiring for 18 steel passenger coaches.

The New York, Ontario & Western is in the market for 10 steel coaches.

The Great Northern railroad is in the market for 10 steel coaches.

The Chesapeake & Ohio railroad is figuring upon 1,000 box and 1,000 coal cars. This order depends upon the acceptance of a special financing plan.

The Lehigh Valley railroad is in the market for 1,000 coal cars.

The Morgantown & Kingswood railroad is expected to buy 400 coal cars in the near future.

The Northern Pacific is inquiring for 250 ore cars to be used in connection with its new line on the Cuyuna range.

The Soo line is inquiring for 10 passenger cars.

The Northwestern system has ordered 10 locomotives from the American Locomotive Co. for the C., St. P., M. & O.

## FAIR BUSINESS

### In Pig Iron in the Buffalo District—Prices Still Declining.

BY FRANK R. DOLBEE

Office of THE IRON TRADE REVIEW,
Buffalo, Nov. 11.

**Pig Iron.**—The placement for the week reached a total of 8,500 to 9,000 tons, representing the best movement noted in several weeks. There is also in the market an inquiry for 5,000 tons of foundry grades from New England and some lots of 500 to 1,000 tons remaining to be booked. The bulk of the sales were in foundry irons and some malleable. Most of the business was taken by one interest. Most of the furnaces report that business is slowing down; that the only ordering being done is for immediate or nearby needs and that the melters, while active to a degree, are closing in on fairly lean order books with little new business in sight for them. The general tendency of the foundries is to order out iron under contract rather than enter new tonnages on the furnace books. Some are said to be drawing against their future allotments, even as far ahead as their January quotas. Prices have undergone a further softening, including at this time the low silicon irons as well as the higher grades, and a moderate drop in the schedule on malleable. This softening is not general. Some of the producers prefer to hold to the schedules previously quoted, taking the stand they will put their stacks out of commission rather than meet a further price reduction.

**Finished Material.**—On bars, shapes and plates the attitude of the consumers in this territory is that prices have not as yet reached the bottom level, consequently the buying is limited. The specifying is confined to early requirements and to balance up stock assortments. Several of the interests report that the bar prices are being more firmly held than on shapes and plates. It is calculated by the mills and agencies that a considerable amount of new business will develop just as soon as users feel that the price sag has reached its last leg.

In tin plate the users seem to be satisfied with the market and are entering their contract requirements at 3.40c base. Orders in this commodity have increased in the past week or ten days. In wire and wire products some orders are being placed against contract requirements at the prevailing jobbers' price of 1.40c, base, on wire, and 1.60c, base, on nails, subject to the usual increase on less carload and consumers' orders. The fabricators report that considerable new business is coming out, apparently on the belief that the market is now right to make favorable contracts. The American Bridge Co. was awarded the contract for the steel in the New Statler hotel for Detroit, Mich., taking about 4,500 tons; also two contracts from the state of New York for two barge canal bridges, requiring about 600 tons. Bids were opened yesterday for the new Husted Milling Co.'s plant, at Buffalo, to replace the one recently burned, taking about 500 tons of structural and 350 tons of reinforcing material.

**Old Material.**—While the scrap market is still practically out of commission in this territory there has been no further softening of prices. Users of the various lines have been making offers in the past week to influence a further decline, but these tenders of business at points below the schedule given have been turned down by the dealers. A little trading has taken place. Some heavy melting steel was shipped to eastern Pennsylvania consumers at a low figure but the movement was insufficient to alter prices quoted.

## ISSUES LIST

### Grand Trunk Pacific Inquires for Machine Tools.

Shop equipment specification No. 1, which includes the machine tool equipment for the machine shops of the Grand Trunk Pacific railway at Prince Rupert, B. C., will be open for bids until Dec. 15. The list was issued by W. T. Donnelly, 17 Battery place, New York, and bids will be received by J. H. Guess, general purchasing agent of the Grand Trunk railway system, Montreal, Que. Bids must be submitted in duplicate. All tools must be of heavy construction, suitable for ship repair work. All tools which are to be motor-driven should include 550-volt, three-phase, 60-cycle alternating current motors, complete with starting apparatus. Belt-driven tools are to be accompanied by countershaft. The list follows:

1 76-inch swing, triple geared engine lathe, single head, length of bed to take 50 feet between centers. Belt driven.
1 42-inch swing, triple geared engine lathe, with compound rest and taper attachment, bed to take 30 feet between centers. Belt driven.
1 24-inch swing, back geared engine lathe, bed to take 10 feet between centers. Belt driven.
2 18-inch swing, back geared engine lathes with compound rest and taper attachment, to take 6 feet between centers. Belt driven.
1 16-inch swing, tool room engine lathe, 6 feet betwwen centers, compound rest, taper attachment, relieving attachment, oil pan, draw-in collet, 12-inch four-jaw independent chuck, 9-inch three-jaw combination chuck, ½-inch drill chuck. Belt driven.
1 72 x 72-inch planer, 20-foot stroke, four heads, motor-driven.
1 24-inch stroke, heavy duty shaper, with vise and counter-shaft, belt-driven.
1 72-inch full universal radial drill, with speed variator and tapping attachment, box table and counter shaft, belt-driven.
1 30-inch upright back-geared, power feed drill. Belt-driven.
1 26-inch upright, back-geared, power feed drill. Belt-driven.
1 36-inch radial drill with tapping attachment. Belt-driven.
1 2-inch single bolt threading machine, with taps and dies, to thread ½ to 2-inch bolts. Belt-driven.
1 6-inch pipe cutting and threading machine with two die heads and interchangeable chasers cutting one and 1¼ to 6-inch pipe. Belt-driven.
1 wet drill grinder with pointing attachment, up to 2½ inch diameter. Belt-driven.
1 No. 4 universal miller, complete with usual equipment, vertical attachment, and one set sample tools. Belt-driven.
1 10-foot heavy boring and turning mill with slotting attachment, belt-driven.
1 72-inch horizontal boring, turning, drilling and milling machine, 6-inch spindle, vertical movement of saddle on column and 6-inch traverse of column on runway fitted with automatic main feed complete with outer support for boring bar; bed plate 10 x 10 feet.

## METAL MARKETS

### Chicago

Nov. 10.

**New Metals.** — Copper continues firm although the increasing production at the northern Michigan mines is having a weakening affect. The strike on the copper range is apparently nearly ended. Spelter has fluctuated very little during the past ten days. Lead is also stationary, while tin has changed only fractionally.

We quote dealers' selling prices f. o. b. Chicago as follows:

Lake copper, carload lots, 17c; casting, 16¾c; smaller lots, ¼c to ¾c higher. Spelter, car lots, 5.30c; lead, desilverized, 4.25c; sheet zinc, $7.50, f. o. b. La Salle, in car lots of 600-pound casks; pig tin, 41c; Cookson's antimony, 8½c; other grades, 7½c.

**Old Metals.**—The old metal market generally continues dull and without features of interest. There is a fair amount of business of hand to mouth nature coming in from the brass foundries. Stocks in the hands of consumers are generally low.

We quote dealers' selling prices f. o. b. Chicago as follows:

Copper wire, crucible shapes, 14¼c; copper bottoms, 12¼c; heavy red brass, 13¼c; heavy yellow brass, 8½c; No. 1 red brass borings, 11½c; No. 1 yellow brass borings, 8c; brass clippings, 9¾c; lead pipe, 4½c; zinc scrap, 4c; tea lead, 4c; No. 1 aluminum, 16½c; No. 1 pewter, 28c; block tin pipe, 36½c; tin foil, 32c; linotype dross, 3c; electrotype dross, 3c; stereotype plates, 4½c; stereotype dross, 3c.

Delay in receiving the blowing engines for the Woodward Iron Co.'s new blast furnace at Bessemer, Ala., has postponed the probable date for putting it in blast. Jan. 1 had been set, but now it is believed April 1 will be the earliest date possible. The furnace is planned to be the most modern in the Birmingham district.

Reorganization of the Ames Plow Co., South Framingham, Mass., is under way to provide $75,000 additional working capital. Management will be in the hands of Willet, Sears & Co.

## BACK WITH SALOON

**Is Demand of Manufacturers—Mr. West Renders an Appeal.**

The license commissioners of Cuyahoga county, in which Cleveland is located, in announcing the men to whom licenses would be granted for saloons, have omitted many who had saloons in the immediate vicinity of industrial plants. In this action, the commissioners were influenced by Thomas D. West and others, who were hostile to the continuance of saloons near such plants. Mr. West, as chairman of the committee recently appointed at the meeting of the American Foundrymen's Association, has issued the following appeal:

To the License Commissioners of the State of Ohio.

Gentlemen:—In view of the fact that many workmen are and can be injured by having their brains befogged with intoxicants obtainable in saloons during working hours, thereby causing themselves and families privations and the state large sums of money for compensation fees and assessments for injury and deaths, all to be collected from consumers and taxpayers, the "Safety First" committee of the A. F. A. respectfully ask that in the granting of any licenses to saloons they be restricted to those at safe distance from industries employing operatives, especially those having work of a hazardous character, and employing men at night.

In connection with the appeal, Mr. West says:

"The constitutional requirement of one saloon for every 500 population is a statute which has many salutary features that should be endorsed by every citizen. It is a movement in which all states will more or less take an interest, and the Sixth City License Commissioners, Messrs. Krause and Horn, are deserving of great praise for the fearless and impartial manner in which the high and low were refused licenses.

"Whether the new license law will be altered by any attack on its constitutionality or not, there are evidently changes to be made in transferring licenses and granting new ones, that should permit those other than past keepers of low resorts, dives and barnyard-kept bar rooms an opportunity to combine against the most objectionable to better secure consideration for themselves by our state's license commissioners.

"The better class of the rejected have two special features, that should appeal to our respectable citizens and license commissioners.

"First: Whether the applicant has conducted a saloon having no regard for respectability and law only as he was driven to do so by sheer compulsion and the policeman's club.

"Second: Whether a saloon is or seeks to be located, so that workmen can absent themselves from their posts of duty to enter it and return in a few minutes without being discovered by foreman, watchman or other officials of the firm engaging their services.

"The preventing of having saloons located in the vicinity of industrial plants so that there can be traffic of persons 'bowled up' or carrying buckets, etc., of intoxicants without taking great risks of such actions being discovered would be very helpful in minimizing accidents that are now maiming around 2,000,000 and killing nearly 35,000 annually in the United States.

"Further: Provisions as above would remove the great embarrassment and insults that women working in offices have often to endure, where saloons are within 10 to 300 feet of the gate entrances or office of the firms by which they are employed.

"The baneful effects of saloons being near industrial plants, especially those of a hazardous character, which also might employ men at night time, came up for serious discussion before The American Foundrymen's Association Convention, Chicago, the 16th ult. The evils were considered so great, and directly connected with the Safety First movement, that the discussion resulted in a committee being enthusiastically appointed with the writer as chairman to have headquarters in Cleveland, and a member from every state to labor for the desired ends.

"The A. F. A. is a national association interested in the advancement of the art of founding, and takes a keen interest in the welfare of all engaged in its varied industries and auxiliaries, employing many thousands of men in our country. It was among the first associations to labor effectually for the prevention of accidents. Its present committee's work to put back the saloon, is in conjunction with its efforts to marshal supervisors of men and work in our country's shops, mills, mines, railroads and anywhere there are bosses who should keep a keen lookout to safeguard those under their charge from being injured.

"A condition inconceivable by our committee, is for any society or body proposing to labor in the interests of Safety First, if it be consistent in its efforts, to ignore taking an active interest in the work of 'Back With the Saloon'."

## LARGEST SINCE JUNE

**Was Decrease in Unfilled Orders of Steel Corporation.**

For the tenth consecutive month, the unfilled orders for the United States Steel Corporation, as announced Nov. 10, showed a decrease for the month of October. The loss for October was 490,018 tons, or the largest since June. The unfilled orders on hand Oct. 31, were 4,513,767 tons. This represents a total decline of 3,418,397 tons from the high point of the bookings in recent years, which was on Dec. 31, 1912.

A statement of the unfilled tonnage of the Steel Corporation showing the changes in tonnage and percentage by months since the plan of announcing monthly the business on hand was adopted, shows the following:

| Date. | Total. | Change, tonnage. | Change, per cent. |
|---|---|---|---|
| Oct. 31, 1913.... | 4,513,767 | 490,018 | 9.79— |
| Sep. 30, 1913.... | 5,003,785 | 219,683— | 4.24— |
| Aug. 31, 1913.... | 5,223,468 | 175,888— | 3.03— |
| July 31, 1913.... | 5,399,356 | 407,965— | 7.03— |
| June 30, 1913.... | 5,807,317 | 517,005— | 8.18— |
| May 31, 1913.... | 6,324,322 | 654,440— | 9.38— |
| Apr. 30, 1913.... | 6,978,762 | 490,194— | 6.55— |
| Mar. 31, 1913.... | 7,468,956 | 187,758— | 2.45— |
| Feb. 28, 1913.... | 7,656,714 | 170,654— | 2.18— |
| Jan. 31, 1913.... | 7,827,368 | 104,796— | 1.32— |
| Dec. 31, 1912.... | 7,932,164 | 79,281+ | 1.01+ |
| Nov. 30, 1912.... | 7,852,883 | 258,502+ | 3.40+ |
| Oct. 31, 1912.... | 7,594,381 | 1,042,874+ | 15.33+ |
| Sep. 30, 1912.... | 6,551,507 | 388,132+ | 6.29+ |
| Aug. 31, 1912.... | 6,163,375 | 206,296+ | 3.46+ |
| July 31, 1912.... | 5,957,079 | 149,773+ | 2.58+ |
| June 30, 1912.... | 5,807,346 | 56,363+ | 0.98+ |
| May 31, 1912.... | 5,750,983 | 86,983+ | 1.52+ |
| Apr. 30, 1912.... | 5,664,885 | 360,044+ | 6.97+ |
| Mar. 31, 1912.... | 5,304,841 | 149,359— | 2.79— |
| Feb. 29, 1912.... | 5,454,200 | 74,479+ | 1.38+ |
| Jan. 31, 1912.... | 5,379,721 | 294,960+ | 5.71+ |
| Dec. 31, 1911.... | 5,084,761 | 942,806+ | 23.24+ |
| Nov. 30, 1911.... | 4,141,955 | 447,627+ | 12.06+ |
| Oct. 31, 1911.... | 3,694,328 | 83,011+ | 2.25+ |
| Sep. 30, 1911.... | 3,611,317 | 84,668— | 2.34— |
| Aug. 31, 1911.... | 3,695,985 | 111,900+ | 3.33+ |
| July 31, 1911.... | 3,584,085 | 223,027+ | 7.16+ |
| June 30, 1911.... | 3,361,058 | 247,871+ | 7.96+ |
| May 31, 1911.... | 3,113,187 | 105,617— | 3.28— |
| Apr. 30, 1911.... | 3,218,704 | 228,597— | 6.63— |
| Mar. 31, 1911.... | 3,447,301 | 46,758+ | 1.37+ |
| Feb. 28, 1911.... | 3,400,543 | 289,624+ | 9.31+ |
| Jan. 31, 1911.... | 3,110,919 | 436,163+ | 16.30+ |
| Dec. 31, 1910.... | 2,674,757 | 85,656— | 3.09— |
| Nov. 30, 1910.... | 2,760,413 | 111,536— | 3.88— |
| Oct. 31, 1910.... | 2,871,949 | 286,157— | 9.12— |
| Sep. 30, 1910.... | 3,159,106 | 379,088— | 10.74— |
| Aug. 31, 1910.... | 3,537,128 | 433,803— | 10.92— |
| July 31, 1910.... | 3,910,931 | 286,863— | 6.72— |

The Steel Improvement Co., Windsor avenue and the C. & P. railroad, Cleveland, has begun the installation of what probably is the largest furnace ever placed in operation in a commercial heat treating plant. It is 21 feet x 9 feet x 7 feet 7 inches over all, and the hearth is 240 x 72 x 42 inches from the spring of the arch. The structural work for the furnace is to be furnished by the American Shop Equipment Co., Chicago.

The Chicago Steel Products Co. advises its recent increase of capital from $550,000 to $650,000 is to provide more working capital and some equipment.

## OPEN PRICE SOCIETIES

**Described by Mr. Jay at Steel Corporation Dissolution Suit Hearing.**

The United States Steel Corporation dissolution suit hearings were resumed at 71 Broadway in New York, Tuesday morning, after an adjournment lasting a little more than a week. James Lippincott, vice president and general manager of the West Leechburg Steel Co., West Leechburg, Pa., was the first witness called. The West Leechburg Steel Co., he said, was organized in the year 1897 and has grown constantly since then. It expanded most rapidly, he said, after the year 1902. Mr. Lippincott said that his company makes about 30,000 tons of billets yearly and purchases an additional 15,000 tons. This material is purchased in the open market, from many different companies. The prices, as quoted by the different makers, are always variant. Mr. Lippincott mentioned the products, such as hoops and bands, which the West Leechburg company makes and sells. He said these products are sold in open and active competition with other makers.

John C. Jay Jr., general manager of sales for the Pennsylvania and Maryland steel companies, with offices at Philadelphia, described the products manufactured by these two concerns. Since 1906, he said, there has been very active competition between makers of steel products. The effect of the "Gary dinners", said Mr. Jay, was to prevent the occurrence of a runaway market "or other foolish actions". There was never any price fixing, though, that he knew of.

The Pennsylvania and Maryland steel companies, said Mr. Jay, now are members of four organizations, known as "open price societies". All these organizations are operative along the same lines. They are the Bridge Builders' Society, Manganese Track Society, Manganese Steel Founders' Society and the Steel Founders' Society of America. "The whole idea of these societies," said Mr. Jay, "is to have perfect frankness with regard to our prices, the way we find business, etc. Of course, we never fix prices, but limit our price announcements to the prices we have charged and do not mention the prices we expect to charge in the future.

"The whole idea is that we get together and throw our cards on the table, and then each one is able to form a sound opinion as to business. One advantage of these meetings is that by means of them we can protect ourselves against dishonest buyers. Formerly when a buyer told one steel maker that it had received a certain low quotation from another steel maker the steel maker, if he wanted the business, would have no means of telling whether or not this was a bona fide quotation. Now, by means of the society, he is able to find out what quotations have been made by his competitors and hence does not have to quote an unreasonably low price to meet a low fictitious price.

"I am sorry to say that the Steel Corporation subsidiaries are not members of these societies," said Mr. Jay.

"I want to add," he continued, "that at the last meeting of one of the societies I was instrumental in having the doors thrown open to the trade paper reporters."

## GERMAN EXTRAS

**Vary Greatly from Those in Use in the United States.**

Extras charged by German mills on steel bars, figure out considerably lower per pound than the prevailing schedules of makers of the United States, according to a published list on rounds, which has come into the possession of a steel manufacturer in the eastern market. While it is specifically stated these extras apply upon rounds, it is accepted that they likewise pertain to squares.

The German makers in the list given, prescribe as allowable much more liberal variations in rolled bars, and on bars ordered to length, than the American producers. The sizes quoted by German makers do not exactly correspond with the American practice.

The published list of extras on German rounds is given below and is compared with the list of half-extras now charged by American mills. Owing to dissimilar ranges of sizes upon which extras are asked, in the two countries, an average of the American half-extras per 100 pounds is taken in those sizes that closest correspond to the American practice.

**GERMAN ROUNDS**

| Size. | Per Metric Ton, 2,204 pounds. (Full-Extras) | Per 100 Pounds. |
|---|---|---|
| 3/8 to 5/8 inch | 15s | 16.54c |
| 5/8 to 3 1/4 inches | Base | ..... |
| 3 1/4 to 4 inches | 5s | 5.51c |
| 4 to 4 3/4 inches | 7s 6d | 8.82c |
| 4 3/4 to 7 inches | 12s 6d | 13.79c |

**AMERICAN ROUNDS**

| Size. | Per 100 Pounds. (Half-Extras) | Average. |
|---|---|---|
| 3/8 inch | 25c | 13.3c |
| 1/2 inch | 10c | |
| 5/8 to 1 1/2 inch | 5c | |
| 3/4 to 3 1/8 inches | Base | ..... |
| 3 1/8 to 3 3/8 inches | 7.5c | 10c |
| 3 5/8 to 4 1/8 inches | 12.5c | |
| 4 1/8 to 4 3/8 inches | 15c | 15c |
| 4 5/8 to 5 inches | 20c | 0.39c |
| 5 1/8 to 5 1/2 inches | 25c | |
| 5 5/8 to 6 inches | 37.5c | |
| 6 1/8 to 6 1/2 inches | 50c | |
| 6 5/8 to 7 1/4 inches | 62.5c | |

On German rounds, the hot roll allowable variations from size are 2 to 4 per cent. On bars ordered to length, the allowable variation is 1 foot, either 6 inches over or under. On dead lengths, the variation is 2 inches, 1 inch under and 1 inch over. Extras for dead length are charged at the rate of 4s per ton.

The variation in hot rolled bars in the American practice is as follows:

To and including 1/4 inch—0.007 inch over and under.
1/4 inch to 1 inch—0.010 inch over and under.
1 inch to 2 inches—0.1/64 inch under and 1/32 inch over.
2 inches to 3 inches—1/32 inch under and 3/64 inch over.
3 inches to 5 inches—1/32 inch under and 3/32 inch over.
5 inches to 8 inches—1/16 inch under and 1/8 inch over.

The allowable variations in American practice on rounds and squares on lengths up to and including 20 feet are as follows:

Up to 2 inches—1/4 inch over and under.
2 inches to 3 inches—3/8 inch over and under.
3 inches to 4 1/4 inches—1/2 inch over and under.
4 1/4 inches to 7 1/4 inches—3/4 inch over and under.

Over 20-foot lengths, the allowable variation is 3/4 inch over and 1 inch under on 3-inch to 4 1/4-inch sizes, and 3/4 inch over and 1 1/4 inches under on 4 1/4-inch to 7 1/4-inch sizes.

American makers have no extra corresponding to the dead length extra shown on the German schedule. The closest classification, apparently, is on machine cut rounds, where the extras are 20 cents over 100 pounds on lengths over 24 inches and 40 cents on lengths 12 inches to 24 inches, inclusive. On lengths under 12 inches, the extra is quoted on application, but is not less than 60c per 100 pounds.

## Will Make Pulverized Coal Equipment

The Knox Pressed & Welded Steel Co., Pittsburgh, has been licensed to manufacture and sell the pulverized coal equipment developed and patented by B. J. Walker, of Erie, Pa., which has been used by the Erie Malleable Iron Co. the last 14 years in connection with metallurgical furnaces and for firing boilers. The new department of the Knox company will be under the management of Edson C. Covert, until recently traveling mechanical engineer for the American Steel Foundries, who has been closely connected with the development of pulverized coal for use in heating and melting furnaces. The Knox company announces it will manufacture the new line in its plant at Farrell, Pa., where welded steel hoppers for pulverized coal installations are being manufactured.

# Many Vessels Wrecked in Storm on Great Lakes

***At Least Eight Vessels Are Total Losses and the Number of Men Lost Will Be Large—Wind is Terrific, and Lowers Water Six Feet in Some Places, Raising it Nine Feet at Buffalo***

Now that lines of communication are being opened it develops that the storm which swept the great lakes from Friday of last week until Monday of this week left in its trail a number of wrecked vessels. For three days vessel owners were practically without information except of the most fragmentary kind, concerning their vessels. Not since 1905 has such a storm been experienced on the lakes. The velocity of the wind was simply terrific, snapping two-inch steel cables like bits of marlin and ripping the bitts out of the vessels. So sudden did the storm arise that vessels at anchor lost their anchors before the strain on them could be eased. For a one-minute period at Cleveland on Sunday the storm reached a velocity of 79 miles an hour and was followed by a steady pressure of 60 miles per hour for nine hours thereafter. Full details of the storm are not yet in, but it is known that at least eight vessels are total wrecks. There has also been considerable loss of life.

Apparently two vessels were totally wrecked at the foot of Lake Huron. The steamer reported as drifting bottom side up has been identified as the Canadian steamer Wexford, owned by the Western Steamship Co., Ltd., Toronto, Ont. All aboard her, numbering 20, were lost. The Wexford was built by Wm. Doxford & Sons, Sunderland, England, in 1883, and is of Canadian canal size. She was found floating bottom side up, and the early reports indicated that her bottom had been recently painted. This in a measure served to identify her, as she went aground on a rocky bottom on Round Island, St. Mary's river, last August, sustaining considerable bottom damage, and her bottom, therefore, would have received a recent coat of paint.

*Ashore at Kettle Point*

There is also a vessel ashore at Kettle Point, but all that can be made out of her name is the word "Queen". This vessel is probably the Northern Queen, which passed the Sault downbound on Sunday morning and has not been accounted for since. Seven bodies have washed ashore at this point and it is believed that they were part of her crew. The Northern Queen is owned by the Mutual Transit Co., Buffalo.

The steamer L. C. Waldo, owned by the Roby Transportation Co., L. C. Waldo, manager, Detroit, went ashore at Manitou island, Lake Superior, and is a total loss. All the members of her crew were saved, but they had an especially trying time, having been for more than three days without food and practically without shelter as the seas were pitching over the boat constantly. The Waldo broke in two when she struck. The crew of the Eagle Harbor life saving station struggled for two days before they were able to rescue the crew of the Waldo.

The Turret Chief, owned by the Canadian Lake & Ocean Navigation Co. was driven high on the beach at the extreme point of Keewenaw, north of Copper Harbor, Lake Superior, and will have to remain there until spring.

The passenger steamer Huronic of the Northern Navigation Co.'s fleet went ashore on Whitefish Point and was badly pounded for three days. She is probably very badly damaged.

The steamer Mathew Andrews of the Steinbrenner fleet is ashore at Corsica Shoal, Lake Huron. She will have to lighter before she can be released, but the sea is too high at present for the wreckers to get to her.

*Hanna May Be Total Loss*

The steamer Howard M. Hanna, owned by W. C. Richardson & Co., of Cleveland, is ashore at Pointe Aux Barques, Lake Huron, and is in bad shape. Reports received by Capt. Richardson Wednesday morning indicate that the Hanna will be a total loss as she is going to pieces. The crew was taken off safely.

The steamer J. M. Jenks, of the Hawgood fleet, is ashore at Midland, Ont. Her bottom is punctured and she will have to lighter part of her cargo of grain.

The steamer F. G. Hartwell, of the Tomlinson fleet, is ashore at Grosse Cap, above the Sault, and is full of water.

The steamer J. T. Hutchinson, owned by the Pioneer Steamship Co., of Cleveland, is ashore at Point Iroquois and is full of water.

The steamer A. E. Stewart, owned by the Stewart Transportation Co., John J. Barlum, manager, Detroit, is ashore at Whitefish Bay.

The Canadian steamer Leafield, owned by the Algoma Steamship Co., is stranded on Angus Island, Lake Superior, and the steamer Acadian, owned by the Merchants Mutual Line, Toronto, Ont., is ashore at Sulphur Springs, in Thunder Bay, Lake Huron.

*High and Dry*

The steamer H. B. Hawgood is ashore high and dry on the Canadian side at the foot of Lake Huron but is in no special danger.

The steamer D. O. Mills, of the Interlake Steamship Co.'s fleet, which went ashore at Harbor Beach, Lake Huron, released herself before the wrecker Favorite could reach her. As she went on a rocky bottom she was damaged somewhat and was sent to Detroit for repairs.

The steamer Victory of the Interlake Steamship Co.'s fleet, which went aground at the entrance to the Livingstone channel, was released after part of her ore cargo had been lightered.

The steamer Matoa of the Pittsburgh Steamship Co.'s fleet, is ashore at Pointe Aux Barques, Lake Huron. Her tanks and engine room are full of water and her cabins are demolished. As she is in the same location as the steamer Hanna, which is pounding to pieces, the probability is that the Matoa will be very badly damaged, if she can be saved at all. All her crew are safe and the wrecker Favorite has been sent to her.

The steamer Cornell, of the Pittsburgh Steamship Co.'s fleet, had to put back to the Sault for repairs as her after deck house was pretty badly demolished by the seas. The steamer George G. Crawford, also of this fleet, lost her anchors and had to return to the Sault.

The steamer Black, of the Pittsburgh Steamship Co.'s fleet, had a serious time of it at Gary. The wind tore out her deck winches at the dock, and as her anchors would not hold her, she pounded against the concrete wall of the dock, receiving heavy damage.

The lumber barge Halsted, owned by the Soper Lumber Co., W. E. Holmes & Co., managing agents, Chicago, Ill., was driven ashore on Green Bay and is a total loss. All her crew were saved.

Lightship No. 82, stationed off Point Abino, Lake Erie, is believed to have foundered, as considerable

wreckage bearing her name has floated ashore at Buffalo. She carried a crew of six men who are probably drowned.

The steamer W. G. Pollock, which went on the east bank below the St. Clair ship canal on Sunday, released herself on Wednesday morning without injury.

*Had a Trying Time*

The steamer Richard Trimble, of the Pittsburgh Steamship Co.'s fleet, had a very trying time at the east breakwater in Cleveland. She had both anchors out, well bridled with 45 fathoms of chain to each anchor, or 16 tons of tackle altogether in good holding ground; and yet she kept drifting. Her predicament was a dangerous one, as she was constantly drifting down to the barges anchored in the breakwater, and the only way she kept from colliding with them was by keeping her engines working full speed ahead at intervals to ease the strain on the chains. At that she had 8,000 tons of water in her, practically a full load. The barges were anchored bow and stern alternately in broadside fashion with cables running diagonally from barge to barge. The wind was so wild, however, that cables which would be secure under all ordinary conditions were loosened up and the barges occasionally came together broadside. The amount of damage sustained is not as yet known. The barges Thomas, Holly and Jenney were blown upon the beach, the Holly being blown against the Lake Shore Saw Mill & Lumber Co.'s dock.

The barges moored in the east breakwater were the Smeaton, Fritz, Roebling, Manila, Maida, Jenney, Thomas, Corliss, Martha and Marcia.

Practically every vessel that was in an exposed condition on the lakes received some damage or other. The steamer J. H. Sheadle in crossing Lake Huron on Sunday had her windows forward smashed, her crew's quarters damaged, all her provisions spoiled and her cargo of grain shifted. The Sheadle later went on Bar Point at the head of Lake Erie, due to low water. The wind was so high that it practically lowered the water from 5 to 6 feet at the western end of Lake Erie and increased it about 9 feet at Buffalo.

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The Berger Mfg. Co., Minneapolis, Minn., has leased the buildings formerly occupied by the Northwestern Foundry Co., and will remodel and occupy them for manufacturing and warehouse purposes.

## WORKING IN EARNEST

**In Preparing for the Anglo-American Exposition.**

Active preparations are now under way to make the Anglo-American Exposition, which will be held in London, Eng., from May to October of next year, a representative collection of exhibits which will typify the advancements which have been made in the arts and sciences, in agricultural, manufacturing and other pursuits by the people of Great Britain and the United States during the last 100 years. The site of the exposition will be Shepherd's Bush, London, where an imposing group of buildings has been erected. These buildings cover 150 acres, are absolutely fireproof and are readily accessible from the heart of London.

The year 1914 will bring the centenary anniversary of the signing of the treaty of Ghent, which has been followed by 100 years of friendly relations between the two countries. The exposition will therefore be in the nature of a commemoration of what has been accomplished during this period. The scope of the undertaking provides for exhibits that will illustrate what the United States and the United Kingdom have done for the world in the century just closing, in every branch of industry, art, science and education, and will include a historical summary of the progress of the two countries for a century.

The idea of a joint American and British exposition was first suggested at a meeting of the American Society in London, presided over by the late Ambassador Reid. Definite plans were not adopted till March 26 of this year, when an inaugural meeting was held in the Mansion House, London. Organized under the auspices of H. R. H. the Duke of Connaught as patron, and H. R. H. the Duke of Teck as honorary president, the list of active and honorary officers includes the names of several hundred distinguished Englishmen, and also some of the most prominent Americans in London.

The American vice presidents to the exposition are Nicholas Murray Butler, president of Columbia University; Hon. Joseph H. Choate, former ambassador to the court of St. James; President Lowell, of Harvard University; James B. Forgan, president of the First National Bank, Chicago; David R. Francis, formerly governor of Missouri; Alba B. Johnson, president of the Baldwin Locomotive Works, and Samuel Mather, of Cleveland. The American general committee includes the governors of states, mayors of principal cities, representatives of railroads and commercial organizations, and American citizens distinguished in arts, science, commerce and the industries. They include Joseph G. Butler Jr., Youngstown, O.; Thomas Devlin, Philadelphia; A. B. Farquhar, York, Pa.; Judge E. H. Gary, New York; Daniel Guggenheim, New York, Henry R. Towne, New York, and George Westinghouse, New York.

The director-general of the exposition is Imre Kiralfy. The various branches for which special committees have so far been appointed are engineering, applied arts, decorative arts, fine arts, liberal arts, electricity, transportation, mining and metallurgy, textiles, chemical industries, alimentation, etc. Information in regard to exhibits may be obtained from the American executive offices of the exposition at Room 1127 Woolworth building, New York. A feature of the exposition which will appeal to prospective exhibitors is that it will close in time to permit the shipment of exhibits through the Panama canal to arrive at San Francisco to be shown at the Panama-Pacific Exposition.

## National Founders' Meeting

The meeting of the National Founders' Association, which will be held at Hotel Astor, New York, Nov. 19 and 20, will include a banquet which promises to be of unusual interest. There will be after-dinner speeches by Marion D. Shutter, D.D., of Minneapolis, and the Hon. L. P. Marchel, of Montreal. Dr. Shutter is pastor of the leading Universalist church of Minneapolis and Mr. Marchel is a member of the Canadian parliament.

## Will Meet in Worcester

The next meeting of the National Metal Trades Association, which has been held annually for a number of years in New York City, will be held during the week of April 13 or April 20, 1914, at Worcester, Mass. The exact date has not been decided. It was decided to meet at Worcester on the urgent invitation of the New England members of the association.

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The Canadian Equipment & Supply Co., Calgary, Alberta, advises it has not formulated plans for the warehouse it is planning to erect at Regina, Sask., the matter being under consideration as to the character and size of structure to be placed there.

# IRON AND STEEL PRICES

## Pig Iron

### PITTSBURGH

(Through This Year.)

| | |
|---|---|
| Bessemer | $16.15 to 16.40 |
| Basic | 14.15 to 14.40 |
| No. 2 foundry | 14.65 to 14.90 |
| Malleable | 14.90 to 15.15 |
| Gray forge | 14.40 |

(The freight from valley points is 50c.)

### CLEVELAND

(Through This Year Delivered in City.)

| | |
|---|---|
| No. 1 foundry | $15.00 |
| No. 2 foundry | 14.50 |
| No. 2 southern | 15.35 |
| Bessemer | 16.15 |
| Silveries, 8 per cent silicon | 18.55 |

### CINCINNATI

(Fourth and First Quarters.)

| | |
|---|---|
| Southern foundry No. 1 | $14.25 to 14.75 |
| Southern foundry No. 2 | 13.75 to 14.25 |
| Southern foundry No. 3 | 13.25 to 13.75 |
| Southern foundry No. 4 | 13.00 to 13.50 |
| Southern gray forge | 12.75 to 13.25 |
| Mottled | 12.75 to 13.25 |
| Southern No. 1 soft | 14.50 to 15.00 |
| Southern No. 2 soft | 14.00 to 14.50 |
| Standard southern car wheels | 27.25 to 27.75 |
| Southern Ohio No. 2 | 14.70 to 15.20 |
| Southern Ohio No. 3 | 14.20 to 14.70 |
| Southern Ohio No. 4 | 13.95 to 14.45 |
| Silveries, 8 per cent silicon | 18.20 to 18.70 |

(Freight from Ironton, $1.20; from Birmingham, $3.25.)

### CHICAGO

(Delivered Chicago, until July 1, 1914, except northern foundry and malleable Bessemer, which are quoted f. o. b. local furnace.)

| | |
|---|---|
| Lake Superior char., No. 1 to 4 | $15.75 |
| Northern foundry No. 2 | 15.00 |
| Southern foundry No. 2 | 15.85 |
| Jackson Co. silveries, 8 per cent | 19.40 |
| South'n silveries, 5 per cent sil. | 17.35 |
| Alabama basic | 15.85 |
| Malleable | 15.00 |

### PHILADELPHIA

(Prompt and third quarter shipment delivered to consumers' plants, in Philadelphia and vicinity, unless otherwise specified.)

| | |
|---|---|
| Northern No. 1X foundry | $16.00 to 16.25 |
| Northern No. 2X foundry | 15.65 to 16.00 |
| Northern No. 2 plain | 15.25 to 15.65 |
| Standard forge (Eastern Pa.) | 14.75 to 15.00 |
| Virginia No. 2X | 15.80 to 16.05 |
| Southern No. 2 | 15.00 to 15.50 |
| Standard low phos., Phila. | 21.50 to 22.00 |
| Lebanon low phos., furnace | 17.50 to 18.00 |
| Malleable | 16.25 to 16.50 |
| Basic (Eastern and Central Pa.) | 15.00 to 15.25 |
| Middlesbrough, English No. 3 (on docks) | 15.00 to 15.25 |

### NEW YORK

(Prompt and third quarter delivery, prices based at Jersey City and tidewater.)

| | |
|---|---|
| Northern No. 1X foundry | $16.00 to 16.25 |
| Northern No. 2X foundry | 15.50 to 16.00 |
| Northern No. 2 plain | 15.25 to 15.50 |
| Virginia No. 2X | 16.10 to 16.35 |
| Southern No. 2 | 15.25 to 15.75 |
| Malleable | 15.75 to 16.00 |
| Gray forge | 14.75 to 15.00 |

### ST. LOUIS

(Throughout This Year.)

| | |
|---|---|
| Southern No. 1 | $15.75 to 16.25 |
| Southern No. 2 | 15.25 to 15.75 |
| Southern No. 3 | 14.75 to 15.25 |
| Southern No. 4 | 14.25 to 14.75 |

(Freight, Birmingham to St. Louis, $3.75.)

### BIRMINGHAM

(For Southern Delivery.)

| | |
|---|---|
| No. 1 foundry | $12.00 to 12.50 |
| No. 2 foundry | 11.50 to 12.00 |
| No. 3 foundry | 11.25 to 11.75 |
| No. 4 foundry | 11.00 to 11.50 |
| Gray forge | 11.00 to 11.50 |
| Mottled | 10.25 |
| Standard basic | 11.50 |
| Off basic | 11.00 |
| Charcoal | 25.00 |

### BUFFALO

(Through this year, delivered in city.)

| | |
|---|---|
| No. 1 foundry | $14.00 to 14.50 |
| No. 2X foundry | 14.00 to 14.25 |
| No. 2 plain | 13.75 to 14.00 |
| No. 3 foundry | 13.50 to 13.75 |
| Gray forge | 13.50 |
| Malleable | 14.00 to 14.50 |
| Basic | 14.50 to 14.75 |
| Charcoal | 15.50 to 16.50 |
| Charcoal (special brands) | 17.00 to 19.50 |

## Ferro Alloys

English and German 80 per cent ferro-manganese, prompt and forward delivery, $49 to $50, seaboard.

Fifty per cent ferro-silicon on contracts, $75, Pittsburgh, or Philadelphia, for carloads; $74 for larger lots and $73 for 600 tons or more. Twelve to 13 per cent, $24. Eleven to 12 per cent, $23. Ten to 11 per cent, $22. Nine to 10 per cent. $21, f. o. b. Globe, Jisco, and Ashland furnace. Freight to Pittsburgh, $1.90.

Ferro-carbon titanium 8 cents per pound for carload lots; 10 cents per pound for 2,000-pound lots and over; 12½ cents per pound in lots up to 2,000 pounds.

Freight rates on ferro-manganese, foreign spiegeleisen and electrolytic ferro-silicon from Baltimore to Pittsburgh, $2.16; to Youngstown $2.48; to Cleveland, $2.57; to Detroit and Columbus, $2.99; to Cincinnati, $3.40; to Chicago and Milwaukee, $4.00. Freights from Philadelphia and New York, 20 to 30 cents higher, respectively.

### Freight Rates, Finished Material

From Pittsburgh, carloads, per 100 pounds, to:—

| | |
|---|---|
| New York | 16 cents |
| Philadelphia | 15 cents |
| Boston | 18 cents |
| Buffalo | 11 cents |
| Cleveland | 10 cents |
| Cincinnati | 15 cents |
| Chicago | 18 cents |
| Denver | 84½ cents |
| St. Louis | 22½ cents |
| New Orleans | 30 cents |
| Birmingham | 45 cents |
| Pacific coast, shapes and plates | 80 cents |

## Coke

AT THE OVENS.

| | Prompt shipment. | Contract. |
|---|---|---|
| Connellsville district: | | |
| Foundry coke | $2.50 to 2.75 | $2.50 to 2.75 |
| Furnace coke | 1.85 to 1.95 | 1.85 to 2.00 |
| Wise county district:— | | |
| Foundry coke | $2.75 to 3.50 | $2.75 to 3.50 |
| Furnace coke | 2.15 to 2.25 | 2.35 to 2.50 |
| Pocahontas district:— | | |
| Foundry coke | $2.85 to 3.00 | $2.85 to 3.00 |
| Furnace coke | 2.20 to 2.40 | 2.35 to 2.75 |
| New River district:— | | |
| Foundry coke | $3.25 to 3.50 | $3.25 to 3.50 |
| Furnace coke | 2.60 to 2.75 | 2.60 to 2.90 |

## Iron Ore

On base ores with the guarantee of 55 per cent on old range and Mesabi Bessemer, and 51½ per cent on old range and Mesabi non-Bessemer, prices are: Old range Bessemer, $4.40; Mesabi Bessemer, $4.15; old range non-Bessemer, $3.60; Mesabi, non-Bessemer, $3.40; all at lower lake ports.

Foreign iron ores, 7½ to 8 cents per unit, f. o. b. cars eastern seaboard. Freight rates from Philadelphia to eastern Pennsylvania furnace points range from 35 to 75 cents per ton.

## Semi-Finished Material

### PITTSBURGH

Bessemer 4 x 4 billets with 0.25 carbon and less, $21 to $22; open-hearth rolling billets, $21 to $22; Bessemer sheet bars, $22 to $23; open-hearth sheet bars, $22 to $23, f. o. b. Pittsburgh and Youngstown. Forging billets, $26, Pittsburgh. Wire rods, $26 to $27; muck bar, $30, Pittsburgh.

### PHILADELPHIA

Delivered to consumers' plants in Philadelphia and vicinity: 4 x 4-inch open-hearth and Bessemer, rolling billets at $24.00 to $25.00, and forging billets at from $29.00 to $30.00; muck bar, $28.00 to $30.00.

## Standard Shapes

### PITTSBURGH

Standard structural shapes, 1.30c to 1.35c. For extras see card of Sept. 1, 1909.

### CHICAGO

Standard structural shapes, 15 inch and under, 1.48c.

### PHILADELPHIA

Standard structural shapes, base sizes, delivered to consumers' plants in Philadelphia and vicinity, 1.40c to 1.50c.

### NEW YORK

Standard structural shapes base sizes, delivered in metropolitan district, 1.46c to 1.51c.

## Plates

### PITTSBURGH

Standard steel plates ¼ inch thick, 6¾ to 100 inches, 1.25c to 1.30c. For extras, see card of Sept. 1, 1909.

### CHICAGO

Tank plates, 1¼ inches thick, 6¾ to 100 inches wide, 1.43c to 1.48c.

### PHILADELPHIA

Tank plates, base sizes, delivered to consumers' plants in Philadelphia and vicinity, 1.40c to 1.50c.

### NEW YORK

Tank plates, base sizes, delivered in the metropolitan district, 1.46c to 1.51c.

## Sheets and Tin Plate

### PITTSBURGH

| | |
|---|---|
| No. 28 black | 2.00c to 2.05c |
| No. 28 tin mill black | 2.00c to 2.05c |
| No. 28 galvanized | 3.00c to 3.10c |
| No. 10 blue annealed | 1.50c to 1.55c |
| No. 28 painted corrugated | 2.20c to 2.25c |
| No. 28 galvanized, corrugated | 3.10c to 3.15c |
| Tin plate, 100-pound cokes | 3.40c |

### PHILADELPHIA

Delivered to consumers' plants in Philadelphia and vicinity: No. 10 gage annealed sheets at 1.60c to 1.65c.

## Pipe and Boiler Tubes

### PITTSBURGH

| | Black Butt-Weld. | Galv. Weld. |
|---|---|---|
| Steel, ¾ to 3 inches | 80 | 71½ |
| Iron, ¾ to 2¼ inches | 70 | 61 |
| | Lap-Weld. | |
| Steel, 2½ to 6 inches | 79 | 70½ |

BOILER TUBES

| | | |
|---|---|---|
| Steel, 3½ to 4½ inches | 69 | .. |
| Iron, 3½ to 4½ inches | 58 | .. |

Other sizes of pipe and tubes take the usual advances as per official cards.

## Rails and Track Material

### PITTSBURGH

Steel rails, 50-pound and heavier, 1.25c per pound for Bessemer and 1.35c for open-hearth, carload lots; less than 500 tons 1.35c per pound; light rails on base weight of 40 to 45 pounds, 1.25c, schedule on the other weights being irregular and subject to negotiations; angle bars for standard sections, 1.50c base, Pittsburgh; track bolts, 2.25c base, Pittsburgh.

Railroad spikes, 4½, 5 and 5½ and 9-16 inch, 1.60c.

### CHICAGO

Light rails, carloads, 25 to 45-pound, 1.25c, base; 16 to 20-pound, 1.30c; 12-pound, 1.35c; 8-pound, 1.40c.

Light section relayers, 45 pounds and under, subject to inspection, $21.50 to $22.50; standard section relaying rails, subject to inspection, $23 to $24.

Track fastenings, f. o. b. Joliet:

Angle bars, 1.50c; railroad spikes, 1.65c to 1.70c; smaller size spikes, 1.85c base; track bolts with square nuts, 2.10c to 2.20c.

## Bars, Hoops and Bands

### PITTSBURGH

Common iron bars, 1.50c, Pittsburgh; Bessemer and open-hearth steel bars, 1.30c to 1.35c; plow and cultivator, 1.30c to 1.35c; channels, angles, zees, tees, under 3 inch, 1.40c to 1.45c, all f. o. b. mill.

Hoops, in carload lots, 1.50c, Pittsburgh; in less than carload lots, 1.55c; bands, 1.30c to 1.35c base, with net extras as per standard steel.

Cold rolled and ground shafting, 62 to 63 per cent off in carloads and 57 to 58 per cent in less than carloads delivered in base territory.

### CHICAGO

Bar iron, 1.17½c to 1.25c, hard steel bars rerolled, 1.40c; soft steel bars, bands and small shapes, 1.48c to 1.58c; hoops 1.58c; smooth finished machinery steel, 1 inch and larger, 1.73c; shafting, 60 per cent off list for carload lots, 55 per cent off for less than carloads.

### PHILADELPHIA

Delivered in consumers' plants in Philadelphia and vicinity: Steel bars, 1.55c to 1.60c on contract and common bar iron, 1.30c to 1.40c. Cut nails 1.80c to 1.90c. Philadelphia. Shafting 62 and 60 off in carloads and 57 and 55 off in less than carloads in base territory.

### NEW YORK

Soft steel bars delivered in the metropolitan district, 1.56c; common iron bars, 1.32c to 1.45c.

## Bolts, Nuts and Rivets

*Rivets*

Button head structural rivets, 1.80c to 1.85c, Pittsburgh, cone head boiler rivets, 1.90c to 1.95c. Small rivets, 80 and 10.

Structural rivets, Chicago, 1.90c; boiler rivets, 0.10c extra.

*Bolt and Nut Discounts*

(Delivered within 20-cent freight radius.)

Carriage bolts, ⅜ x 6 inches, small and shorter, rolled threads, 80 and 2½; cut threads, 75 and 17½; larger and longer, 70 and 15.

Machine bolts with hot pressed nuts, ⅜ x 4 inches, smaller and shorter, rolled 80 and 7½; cut, 80 and 2½; larger and longer, 70, 10 and 10.

Gimlet and cone point lag or coach screws, 80 and 20.

Hot pressed square, blank or tapped nuts, $6.00 off list; hot pressed hexagon blank or tapped, $6.70.

Cold pressed C. & T. square, blank or tapped, $5.80 off; hexagon, blank or tapped, ⅝ inch and larger, $6.80 off; ½-inch and smaller, $7.40.

## Wire Products

### PITTSBURGH

Wire nails, jobbers' carload lots, $1.60; retailers' carload lots, $1.65; cut nails (western makers), jobbers' lot, $1.65; painted barb wire, jobbers' carload lots, $1.65; retailers' carload lots, $1.60; plain wire to jobbers in carloads, $1.40; and to dealers in carloads, $1.45; polished staples, $1.60; galvanized staples, $2.00.

### CHICAGO

Wire nails, jobbers' carload lots, $1.78; retailers' carload lots, $1.83; retailers' less than carload lots, $1.88; painted barb wire, jobbers' carload lots, $1.78; retailers' carload lots, $1.83; retailers' less than carload lots, $1.88; with 40c for galvanizing; plain wire, jobbers' carload lots, $1.58; retailers' carload lots, $1.63.

## Cast Iron Pipe

### CHICAGO

Four-inch water pipe, $27; 6 to 12 inches, $26; larger sizes, $24; gas pipe, $1 a ton higher.

### NEW YORK

Six-inch pipe, 30 pounds to the foot, $23 to $24, f. o. b. New York, in carload lots.

### BIRMINGHAM

Water mains; 4-inch, $21.50; 6-inch and up, $19.50. Gas main: $1 per ton higher than water main. Special fittings, $47.50 to $52.50.

## Old Material

### PITTSBURGH

(Gross Tons Delivered.)

| | |
|---|---|
| Heavy melting scrap | $11.50 to 11.75 |
| Rerolling rails | 13.50 to 14.00 |
| Malleable | 10.50 to 10.75 |
| Bundled sheet scrap | 6.50 to 7.00 |
| Iron axles | 23.00 to 23.50 |
| Old iron rails | 13.50 to 14.00 |
| Stove plate | 8.50 to 9.00 |
| No. 1 wrought scrap | 12.00 to 12.50 |
| Old car wheels | 11.50 to 12.00 |
| Low phosphorus | 14.00 to 14.25 |
| Machine shop turnings | 6.75 to 7.00 |
| No. 1 busheling | 9.25 to 9.50 |
| Cast borings | 7.00 to 7.50 |
| No. 1 cast scrap | 11.50 to 12.00 |

### PHILADELPHIA

Gross tons delivered to consumers' plants, in eastern Pennsylvania and western New Jersey:

| | |
|---|---|
| Old iron rails (nominal) | $16.00 to 16.50 |
| Old steel rails (rerolling) | 13.50 to 14.00 |
| No. 1 heavy melting steel | 10.50 to 11.00 |
| Old car wheels | 12.25 to 12.75 |
| Old iron axles (nominal) | 22.00 to 23.00 |
| Old steel axles | 17.50 to 18.00 |
| No. 1 railroad wrought | 13.50 to 14.00 |
| Wrought pipe | 9.50 to 10.00 |
| Cast borings | 7.50 to 7.75 |
| Machine shop turnings | 7.00 to 7.50 |
| Heavy cast (broken) | 13.00 to 13.50 |
| Malleable | 11.00 to 11.50 |
| Stove plate | 9.50 to 10.00 |
| No. 1 forge | 8.00 to 8.50 |
| Low phosphorus | 15.00 to 15.50 |

Freight rates per ton on scrap from Philadelphia to principal eastern consuming points are: $0.60 to Ivy Rock, Pa.; $0.65 to Phoenixville, Pa.; $0.80 to Coatesville, Pa.; $0.85 to Bethlehem, Pa., Reading, Pa., and Roebling, N. J.; $1.10 to Pottsville, Pa., Lebanon, Pa., and Columbia, Pa.; $1.20 to Harrisburg, and Steelton, Pa.; $1.40 to Milton, Pa.

### CLEVELAND

*Gross Tons*

| | |
|---|---|
| Old iron rails | $12.50 |
| Old steel rails (under 3 ft.) | 12.00 to 12.50 |
| Old steel rails (over 6 ft.) | 11.50 to 12.00 |
| Relaying rails | 23.00 to 25.00 |
| Old steel boiler plate | 8.00 to 8.50 |
| Malleable iron (railroad) | 11.00 to 11.50 |
| Axle turnings | 6.00 to 6.50 |
| Steel axles | 16.50 to 17.00 |
| Malleable iron (agricultural) | 8.50 to 9.00 |
| Heavy steel | 9.50 to 9.75 |
| Country mixed steel | 8.00 to 8.50 |
| Bundled sheet scrap | 6.50 to 7.00 |

*Net Tons*

| | |
|---|---|
| No. 1 R. R. wrought | $10.50 to 11.00 |
| No. 1 busheling (nominal) | 8.50 to 9.00 |
| No. 1 machine cast | 10.50 to 11.00 |
| No. 1 dealers' wrought | 8.00 to 8.50 |
| Machine shop turnings | 4.00 to 4.50 |
| Pipes and flues | 7.00 to 7.50 |
| Wrought drillings | 4.00 to 4.50 |
| Cast borings | 5.00 to 5.50 |
| Stove plate | 8.00 to 8.25 |
| Wrought iron arch bars (nom.) | 13.00 |
| Wrought iron piling plate (nom.) | 13.00 |

### CHICAGO

(Delivered in consumers' yards.)

*Gross Tons*

| | |
|---|---|
| Old car wheels | $11.50 to 12.00 |
| Old iron rails | 13.25 to 13.75 |
| Rerolling rails (5 ft. and over) | 12.00 to 12.50 |
| Old steel rails (3 ft. and und.) | 11.00 to 11.50 |
| Frogs, switches and guards | 9.75 to 10.25 |
| Heavy melting steel | 9.75 to 10.25 |
| Shoveling steel | 9.00 to 10.00 |

*Net Tons*

| | |
|---|---|
| No. 1 R. R. wrought | $9.00 to 9.50 |
| No. 2 R. R. wrought | 8.00 to 8.50 |
| Arch bars and transoms | 12.50 to 13.00 |
| Knuckles, couplers and springs | 9.50 to 10.00 |
| Shafting | 13.50 to 14.00 |
| Iron car axles | 20.25 to 20.75 |
| Steel car axles | 13.00 to 13.50 |
| Locomotive tires | 11.00 to 11.50 |
| Dealers' forge | 8.50 to 9.00 |
| Pipe and flues | 7.00 to 7.50 |
| No. 1 cast | 10.50 to 11.00 |
| No. 1 busheling | 7.75 to 8.25 |
| No. 2 busheling | 6.25 to 6.75 |
| No. 1 boiler cut | 7.00 to 7.50 |
| Boiler punchings | 10.25 to 10.75 |
| Cast borings | 4.50 to 5.00 |
| Machine shop turnings | 4.25 to 4.75 |
| Agricultural malleable | 9.00 to 9.50 |
| Railroad malleable | 9.50 to 10.00 |
| Angle bars, splices, etc., iron | 13.00 to 13.50 |
| Angle bars, steel | 9.00 to 9.50 |
| Stove plate and light cast scrap | 8.75 to 9.25 |

### NEW YORK

Gross tons, New York dealers' prices at tidewater, usually for eastern Pennsylvania delivery:

| | |
|---|---|
| Old car wheels (nominal) | $10.50 to 11.00 |
| Heavy steel axles | 15.25 to 15.50 |
| Steel shafting | 14.00 to 14.50 |
| No. 1 heavy melting steel | 8.50 to 8.75 |
| No. 1 R. R. wrought | 11.00 to 11.50 |
| Wrought pipe (not galvanized) | 8.00 to 8.50 |
| Cast borings | 5.50 to 6.00 |
| Machine shop turnings (nominal) | 5.50 to 6.00 |
| Heavy cast | 10.50 to 11.00 |

| | |
|---|---|
| Stove plate | 7.50 to 8.00 |
| Grate bars | 6.50 to 7.00 |

Freight rates on scrap per ton to Steelton, Pa., Columbia, Pa., Pottsville, Pa., and Harrisburg, Pa., are $1.50 from Jersey City, and $2.00 from New York; to Coatesville, Pa., Ivy Rock, Pa., Phoenixville, Pa., and Reading, Pa., $1.50; from Jersey City, and $1.80 from New York; to Bethlehem, Pa., $1.10 from Jersey City, and $1.60 from New York; to Roebling, N. J., $1.00 from Jersey City, and $1.50 from New York; to Milton, Pa., $1.60 from Jersey City, and $2.00 from New York; to Jersey City, $1.00 from New York; to Newark, $1.10 from New York.

### CINCINNATI

*Gross Tons*

| | |
|---|---|
| Old iron rails | $11.00 to 11.50 |
| Old steel re-rolling | 9.50 to 10.00 |
| Old iron axles | 15.50 to 16.00 |
| Heavy melting scrap | 8.50 to 9.00 |
| Relaying rails | 18.50 to 19.00 |

*Net Tons*

| | |
|---|---|
| Old No. 1 R. R. wrought | $ 8.50 to 9.00 |
| Bundled sheet scrap | 4.50 to 5.00 |
| No. 1 yard wrought | 6.50 to 7.00 |
| No. 1 machine cast | 8.50 to 9.00 |
| No. 1 busheling | 6.00 to 6.50 |
| Stove plate | 6.25 to 6.75 |
| Machine shop turnings | 4.00 to 4.50 |
| Cast borings | 4.00 to 5.00 |
| Heavy turnings | 5.00 to 5.50 |
| Mixed cast | 7.50 to 8.00 |
| Breakage | 5.00 to 6.00 |
| Malleable | 6.50 to 7.00 |

### BIRMINGHAM

| | |
|---|---|
| Old iron axles (light) | $15.00 to 15.50 |
| Old steel axles (light) | 15.00 to 15.50 |
| Old iron rails | 12.50 to 13.50 |
| No. 1 R. R. wrought | 12.00 to 12.50 |
| No. 2 R. R. wrought | 10.00 to 10.50 |
| No. 1 country wrought | 9.50 to 10.00 |
| No. 2 country wrought | 8.50 to 9.00 |
| No. 1 machinery cast | 10.50 to 11.00 |
| No. 1 steel scrap | 10.50 to 11.00 |
| Standard car wheels | 12.00 to 12.50 |
| Tram car wheels | 10.50 to 11.00 |
| Light cast and stove plate | 9.00 to 9.25 |

### BUFFALO

*Gross Tons*

| | |
|---|---|
| Heavy melting steel | $ 9.75 to 10.50 |
| No. 1 R. R. wrought scrap | 12.50 to 13.00 |
| No. 1 R. R. and mch. cast scrap | 12.00 to 12.50 |
| Old steel axles | 17.00 to 17.50 |
| Old iron axles | 22.50 to 23.00 |
| Car wheels | 11.75 to 12.25 |
| Railroad malleable scrap | 11.25 to 11.75 |
| Machine turnings | 5.25 to 5.75 |
| Heavy axle turnings | 8.00 to 8.75 |
| Cast iron borings | 5.50 to 6.00 |
| Low phos. steel scrap | 16.50 to 17.00 |
| Old iron rails | 15.00 to 15.50 |
| Boiler plate sheared | 12.00 to 12.50 |
| Bundled sheet scrap | 7.00 to 7.50 |
| Stove plate (net ton) | 9.75 to 10.00 |
| Locomotive grate bars | 9.50 to 10.00 |
| No. 1 busheling scrap | 9.00 to 9.50 |
| No. 2 busheling scrap | 7.00 to 7.50 |
| Wrought pipe | 8.50 to 9.00 |

### ST. LOUIS

(Dealers' buying prices.)

*Gross Tons*

| | |
|---|---|
| Old car wheels | $10.25 to 10.75 |
| Old iron rails | 11.00 to 11.50 |
| Re-rolling rails (5 ft. and over) | 10.50 to 11.00 |
| Old steel rails (3 ft. and und.) | 9.00 to 9.50 |
| Light sec. relayers (45 pounds and und.) subject to inspec. | 23.00 to 23.50 |
| Relaying rails subject to inspec. | 23.00 to 23.50 |
| Frogs, switches and guards | 8.50 to 9.00 |
| Shoveling steel | 8.00 to 8.50 |

*Net Tons*

| | |
|---|---|
| No. 1 railroad wrought | $9.00 to 9.50 |
| No. 2 railroad wrought | 8.50 to 9.00 |
| Arch bars and transoms | 12.00 to 12.50 |
| Knuckles, couplers, springs | 8.00 to 8.50 |
| Shafting | 12.50 to 13.00 |
| Steel car axles | 14.00 to 14.50 |
| Iron car axles | 17.00 to 17.50 |
| Locomotive tires | 10.00 to 10.50 |
| Pipe and flues | 6.00 to 6.50 |
| Tank iron and cut boilers | 6.00 to 6.50 |
| No. 1 cut busheling | 8.00 to 8.50 |
| Cast iron borings | 3.00 to 3.50 |
| Machine shop turnings | 4.00 to 4.50 |
| Railroad malleable | 7.50 to 8.00 |
| Agricultural malleable | 6.00 to 6.50 |
| Stove plates | 7.00 to 7.50 |
| Angle splice bars (iron) | 10.00 to 10.50 |
| Angle splice bars (steel) | 8.00 to 8.50 |

## Store Prices

### CINCINNATI

Steel bars, 1.85c to 2c; iron bars, 1.80c to 1.90c; plates and shapes, 1.95c to 2.10c; sheets, blue annealed, No. 10, 2.15c to 2.20c; black No. 28, 2.65c; galvanized, No. 28, 3.75c; cold rolled shafting, round, square, hexagon and flat, 55 to 58 off.

### CLEVELAND

Steel bars, 1.85c; plates and shapes, 2.00c; iron bars, 1.85c; sheets, No. 10 blue annealed, 2.15c; No. 28 black, 2.60c; No. 28 galvanized, 3.60c.

### CHICAGO

Steel bars, 1.75c; iron bars, 1.75c; hoops, 2.25c; shapes and plates, 1.85c; No. 10 blue annealed sheets, 2.05c, black, No. 28, 2.65c; galvanized, No. 28, 3.70c.

### PHILADELPHIA

Steel bars, 1.85c to 1.90c; structural shapes, 2.00c; plates, 2.00c.

### NEW YORK

Steel bars, 2.00c; structural shapes, 2.05c; plates, 2.05c.

## Chicago Escaped

Chicago, Nov. 11.—The recent severe storms over the great lakes left Chicago comparatively untouched. Steel mills and other industrial establishments in the Chicago district are operating as usual and railroad traffic, except to the east, has not been interrupted. There has been no snow or rain in Illinois and aside from a high wind Sunday night and Monday, no unusual weather has been experienced.

The Bacon-Underwood Veneer Co., Stockton, Ala., advises it is rebuilding its kilns and shipping room, destroyed by fire, and will be in operation shortly.

The Williamsport Iron & Nail Co., Williamsport, Pa., advises it is fitting part of its plant to galvanize by the electric process, instead of the hot dip process formerly used exclusively.

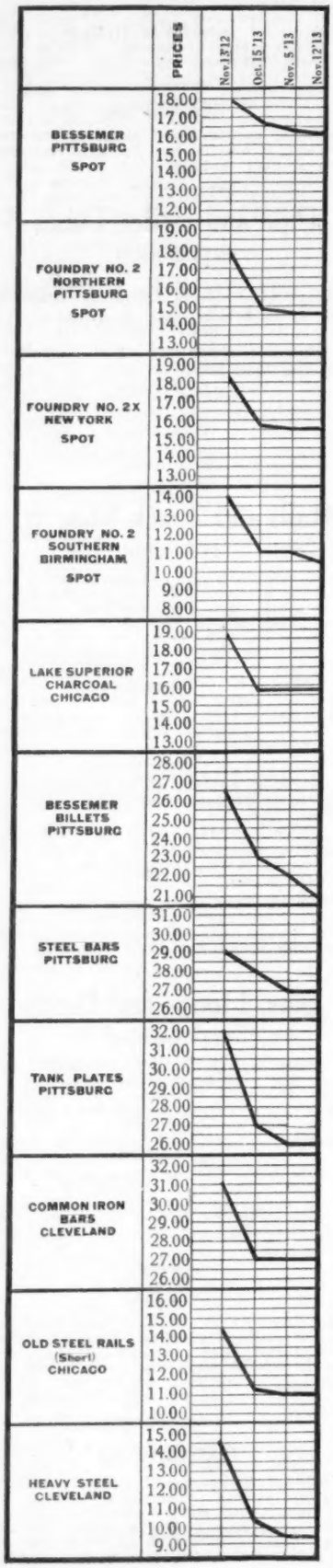
Eleven puddling furnaces out of 29 at the Byers plant at Pittsburgh, are in operation under open shop rules. No attempt has been made to operate the mills at Girard, O.

The Puget Sound & Queen City Boiler Works, Seattle, Wash., has changed its name to the Puget Sound Boiler Works and reduced its capital from $50,000 to $15,000.

Capital stock of the Michigan Machine Co., Detroit, has been decreased from $150,000 to $100,000.

Stock of the Vulcan Motor Device Co., Philadelphia, has been increased from $640,000 to $680,000.

## PRICE CHART



## DETERMINED FIGHT

**Will be Made Against Some of the Proposed Freight Advances.**

Washington, Nov. 11.—Discussion as to the outcome of the eastern rate advance case has been renewed following the order of the Interstate Commerce Commission of last Saturday suspending until March 12, 1914, the proposed increases of the railroads affecting the territory east of the Mississippi and north of the Ohio and Potomac rivers. The first hearing will be held before the commission in this city at 10 a. m., Monday, Nov. 24.

The suspension order embraces all of the tariffs, totaling 21,000, and is known as No. 333, while the case is covered by docket No. 5860.

It is confidently believed that, whatever other success the carriers may meet with in being allowed advances, increases on low commodities, such as coal, coke and ore, will not be granted. Every indication points to a sharp fight by the iron and steel interests against higher rates on these pig iron making products, and pending cases before the commission represent in part the position of the iron and steel industry toward rates on all three products in various sections included in the territory in which the increases are proposed. There are also cases before the commission protesting against rates on sem-finished and finished products of iron and steel, among them being that of the Pittsburgh Steel Co.

The case, perhaps the greatest to ever come before the commission, is being approached by both shippers and the public with a more liberal attitude toward the railroads than has been apparent in the past, according to all indications. Yet it will be fought out by some of the greatest legal talent in the country and the railroads compelled to show justification, if possible, for advances.

The proposed increases on coal, coke and ore promise to be the object of unusual attention during the expected strong attack by attorneys representing the shippers. These commodities were not included in the tariffs of the railroads when they proposed advances in 1910 in the same territory as is affected in the present case and when an increase of 10 per cent was sought and denied. The minimum increase asked in the proposed tariffs on these products is 5c per ton, with a 5 per cent advance asked where the present rate is more than $1 per ton.

Having suspended the tariffs until next March, it is evident that the expressed belief that the case will be prolonged has been verified. Even with the date placed so distant in the future, it would not be surprising if it were necessary to extend it further, as the hearings will be extremely thorough and involve an enormous mass of data to be submitted before the commission.

The suspension order appeared at the expected time and was entered two days after a visit to Washington of Attorney Louis D. Brandeis, of Boston, who is to represent the commission in the case, and of E. M. Morris, of Chicago, chairman of the Central Freight Association. Both of them held separate conferences with members of the commission in regard to the time of the preliminary hearing. Attorney Brandeis said that he would return to Washington this week to go further into the case. He would not discuss it in any way, and, as he is to appear for the commission, is not expected to take such a strong, personal attitude against the railroads as he did when he appeared against them "for the commonwealth" in 1910.

## Bonds For Improvements

The election in Louisville and Kentucky, Nov. 4, was of interest to machinery men on account of the number of bond issues voted on. Louisville authorized an issue of $1,000,000 for schools, and the equipment of the buildings to be erected will be an important item in their cost. Lexington turned down a $200,000 issue for a municipal electric light plant. Harrodsburg voted to issue $12,000 for the purpose of improving the electric light plant. Lawrenceburg voted against a bond issue, which was to have enabled needed improvements to be made in the water system.

**Not Unreasonable.**—The Interstate Commerce Commission in an unreported opinion handed down last week in the case of the Baum Iron Co., Omaha, against the C., B. & Q. railroad, held that the rate of 16c per 100 pounds on bar iron from Kansas City, Mo., to Omaha is not unreasonable.

A Canadian branch of the British firm of Armstrong, Whitworth & Co. has been incorporated as Armstrong-Whitworth & Co., of Canada, Ltd., with capital of $2,000,000, and head offices in Montreal. The incorporators are Sir Percy Girouard, Rt. Hon. Sir George H. Murray, Sexton W. A. Noble, George G. Foster, K. C., John A. Mann, K. C., and M. J. Butler, C. M. G. A site for shipbuilding and machine works has been secured at Longueil, near Montreal.

## DECLARED ABSURD

**Are Certain Statements Made by Railroad Companies.**

Washington, Nov. 12.—The Interstate Commerce Commission has been hearing arguments in the matter of fabrication in transit charges. Railroads propose to increase the rate in what is known as Central Freight Association territory from 1½c to 2½c per 100 pounds.

Complainants include the King Bridge Co., the Lackawanna Bridge Co., the Riverside Bridge Co., the Toledo Bridge Co. and the Chamber of Commerce of Indianapolis. The latter organization appears for the Noelke-Richards Co., and the Central States Bridge Co., and filed a separate brief a few days ago with the commission, while the other complainants filed a joint brief of 428 pages.

The situation is dealt with at length. It is argued that the margin of profit on structural iron and steel is very small; that the proposed increase of transit charge is unreasonable; that the transit charge at times is a controlling factor in securing contracts for fabrication at interior points. It is also pointed out that the switching and transit charges on iron and steel are the highest assessed on any commodity, and that it is absurd for the carriers to say that the rate is low and unremunerative. The briefs also refute sharply the claim of the railroads that competition is not so strong in the iron and steel business as it is on the other commodities which are given lower transit charges, but declare that the existence and degree of competition in the iron and steel industry is patent to everybody.

"If it is claimed by the carriers that their compensation for terminal switching service is inadequate," says the brief of the Chamber of Commerce, Indianapolis, "and they are seeking to remedy the situation, why should they select the traffic which is paying the highest transit charge and attempt to raise that, while performing identical service on other commodities at a much lower charge and in many cases rendering the service free of charge?"

This brief points out that plants at interior localities could not compete if the proposed increased rate went into effect with industries at terminal and rate-breaking points, and would be driven out of business.

The Columbia Paper Bag Co., Long Island City, N. Y., advises it is in the market for shafting, pulleys and similar equipment.

# THE IRON TRADE REVIEW

DEVOTED TO THE IRON, STEEL, MACHINERY AND FOUNDRY INDUSTRIES

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## Power For Good or Bad

A significant statement was made a few days ago by Judge Hook, one of the judges who last week heard the arguments in the dissolution suit of the government against the International Harvester Co., at St. Paul. In the famous Northern Securities case, the court held that the mere possession of power to restrain trade, whether that power was exercised or not, made a concern a monopoly under the Sherman law. The court apparently was not willing to admit that if a company could show a good record and had used its power in a proper way, it should be held guiltless under the Sherman law. Even if, as the International Harvester Co. claims, it has advanced wages 27 per cent, has sold abroad $159,000,000 worth of goods, and has improved conditions in many other respects, the evidence would be of no effect, because the great power of the company might be abused.

On the other hand, Judge Hook seems to think that good conduct is the all-important factor. One of the attorneys for the company in his argument admitted that, some years ago, shortly after the formation of the company, there was great rivalry among the five division managers, who conducted business as it had been done for years in the harvesting and machinery lines, and followed methods of competition which were not always "gentlemanly". These conditions, said the attorney, were not created by the International Harvester Co., but were ameliorated by it.

Judge Hook interrupted the attorney, Mr. Bancroft, to say: "I don't suppose there ever has been a business of any kind that has not had some of this sort of thing. But the question before this court is whether there was enough of it by the International Harvester Co. to make this concern guilty under the provisions of the Sherman law."

This remark of Judge Hook clearly indicates that he regards the matter of conduct as highly important. Even if the International Harvester Co., and other consolidated companies were guilty of reprehensible conduct years ago, when public conscience in regard to relations of the corporations to the people was not fully aroused, and when the companies and the people did not as fully understand their rights as they do today, that does not mean that a company should be convicted and dissolved today, when its methods are entirely within the law.

## Metal Furniture

Correlative with the general public's demand during recent years for fireproof buildings and structures of all kinds, there has arisen an increasing demand for metal furniture and furnishings, especially in large office, public and semi-public buildings, and manufacturing plants liable to fire losses. Another important feature adding to the desirability of metal furniture is one of sanitation.

Several important improvements, both in the design and method of manufacturing this type of furniture, have been devised, better to meet the demand. The ease of cutting and shaping sheet metal to meet almost any design tends to lessen its manufacturing cost and increase its popularity.

"An absolute law," said Thomas A. Edison recently, "appears to be operating to substitute steel for wood in the making of furniture. This law is the increasing cost of wood, and soon all furniture will be made of steel, since the steel required for a given piece of furniture costs only one-fifth as much as the wood would cost for the same piece of furniture. Steel furniture is light, since only a little steel is required. And polished steel takes a beautiful finish. It can be finished in perfect imitation of mahogany, walnut, cherry, maple, oak, or any other wood. The babies of the next generation will sit in steel high-chairs and eat from steel tables. They will not know what wooden furniture is."

## Submerged Protection

The new tariff is only a few weeks old and probably it is dangerous to try to draw any final conclusions as to the effect it can be expected regularly to exert upon the iron and steel industry of the United States.

The close scanning of foreign mill prices by buyers at coast and nearby points and the sizing-up of every angle of importation with the cold calculation of a plain business proposition, however, have already accomplished something. They have brought into relief

various aspects of the question which, while recognized in the pre-enactment days of declamation and debate over the bill, could not be figured out until now in good American dollars. These have to do with matters which may be said to be outside of the mere relation of foreign and domestic mill prices. They involve the stricter credit requirements of foreign makers; the practice of the latter to regard a contract at its face value, from which domestic manufacturers can learn something to their profit; the necessity of business dealing over great distance; the differences in chemical and physical standards between foreign and physical products and various other factors.

All these matters have their equivalent in dollars and cents, although just how much they represent no two consumers will probably agree. Each and every one of them operates to strengthen the hold of the domestic producer upon the home market if for no other reason than that his is the logical source of supply. They tend to prove that there is and always will be greater protection in effect to the home producer against foreign competition than that which appears in the language of any tariff bill.

## Development of the By-Product Coke Industry

The revolution in coke making, which has been under way since 1893, continues to gain ground at a remarkably rapid rate, and, as the close of another year approaches, it looks very much as if Edward W. Parker hit the nail squarely on the head, some time ago, when he predicted that before the close of the present decade more than half the coke manufactured in this country will be from retort ovens.

Owners of blast furnaces, foundries and operators of bee-hive oven plants are closely watching this revolution, which Mr. Parker describes as a substitution of retort ovens for the wasteful bee-hive type and a noticeable shifting of the coke-making industry from the source of coal supply to the thickly populated manufacturing centers, where demand exists, not only for coke, but for gas, tar, ammonia and other by-products.

Mr. Parker's report on "The Manufacture of Coke in 1912", issued by the United States Geological Survey, is of particular interest to the iron and steel trade, especially at this time, when the subject of future coke prices is being discussed in all quarters of the country.

"In 1912, as in 1911," Mr. Parker writes, "the most significant feature of the coke-making industry of the United States was the progress shown in the construction of retort or by-product ovens and the increase in the production of retort-oven coke. The number of retort ovens in operation increased from 4,624 in 1911 to 5,211 in 1912, a gain of 587, whereas the total number of all ovens decreased from 103,879 to 102,230, indicating that there were 2,236 fewer bee-hive ovens in existence in 1912 than in 1911. Some new ovens of the bee-hive type were built in 1912, but the number abandoned exceeded all the new ones by 1,649, which represented the decrease in the total number of ovens. There was a general increase in production of both bee-hive and retort-oven coke; the former by 18.7 per cent, and the latter by 41.6 per cent. The output of the retort-ovens, which represented less than 5 per cent of the total number of ovens, was a little more than 25 per cent of the total. In 1911, the retort ovens contributed 22.07 per cent of the total."

At the beginning of this year, the 21st year in the history of by-product coke making in this country, 793 retort ovens were under construction, or 95 more than were being built at the beginning of the preceding year. And several large plants have been ordered the last 10 months.

"Of the 43,983,599 short tons of coke made in the United States in 1912," Mr. Parker continues, "32,868,435 tons were bee-hive or 'oven' coke, valued at $69,103,766, and 11,115,164 tons, valued at $42,632,930, were retort or by-product coke." Compared with figures for the preceding year, the production of oven coke, in 1912, increased 5,164,791 tons, or 18.7 per cent, while that of retort coke increased 3,267,319 tons, or 41.6 per cent. The percentage of by-product coke to the total output has increased from 15.91 in 1909 to 17.12 in 1910, to 22.07 in 1911 and to 25.27 in 1912, Mr. Parker reports.

Blast furnace coke of the bee-hive oven type sells at a much lower figure than by-product coke. The best grades of spot "oven" coke, those from the Connellsville regions in Pennsylvania, sold at the following average prices, per ton at the ovens, according to tables maintained by THE IRON TRADE REVIEW: 1908, $1.70; 1909, $1.92; 1910, $1.77; 1911, $1.48; 1912, $2.55. By-product coke, Mr. Parker says, in 1908 averaged $3.44; in 1909, $3.27; in 1910, $3.47; in 1911, $3.48; in 1912, $3.84. The average price of "oven" coke during the five years just reviewed was $1.88, as against an average of $3.50 for by-product coke. The question of freight rates enters into the ultimate cost to the consumer, and benefits derived from lower rates would tend to reduce the relatively high cost of by-product coke.

That the coke-making industry is shifting, is clearly shown by the change in rank of the coke-producing states. In 1912, Indiana advanced from sixth to third place and West Virginia was relegated to fourth place. Mr. Parker says: "In 1910, Indiana was only seventeenth in the list, the advance in the last two years being due principally to the operations of the 560 Koppers ovens by the United States Steel Corporation at Gary." West Virginia dropped from second to third place in 1911, but that state is furnishing coal for by-product coke ovens in Illinois, Indiana and Ohio. Pennsylvania continues to head the list.

The increased interest and activity in the development of retort-oven practice in the United States, certainly tends to bear out Mr. Parker's statement regarding the revolution in the coke-making industry. Coke operators in the Connellsville regions do not appear to be worrying, however. They take the stand that there always will be sufficient demand for high grade "oven" coke, and contend that developments the last few years indicate a comparatively restricted area of high grade coking coal of Connellsville's characteristics. This area is much undersized compared with the increasing consumption in this country. Then, too, it is argued that entirely new demands may spring up for "oven" coke before the end of the decade.

# SAFETY IN TRAVEL

## As Related to Iron and Steel Equipment Considered.

Washington, Nov. 12.—Rail manufacture and steel car equipment with regard to increased safety in travel formed an interesting discussion at the meeting in this city recently of the National Association of Railway Commissioners. The open-hearth rail was recommended as being superior to the Bessemer rail, tests were suggested to compare the relative quality of the American-made rail with that of Europe, and numerous suggestions, reiterating those of the committee on rails and equipment of last year were made. Looking to improvement in the rail failure record, they included improved maintenance of equipment, the substitution of open-hearth for Bessemer steel, with consequent reduction of phosphorus, improved methods of manufacture, especially directed to secure sound ingots, sufficient discard to remove the segregated and defective metal at the top of the ingot, heavier rails and improved sections with heavier bases and rigid specifications and careful inspection of all details of manufacture.

No specific conclusion as to steel cars was reached in the report of the committee, of which James E. Sague, of the public service commission for the second district of New York, is chairman, and of which Chairman E. E. Clark, of the Interstate Commerce Commission, is also a member.

Mr. Clark, in discussing the report after it had been presented by Mr. Sague did, however, express his firm belief in the use and adoption of the steel cars by the railroads, at the same time explaining that he did not wish to minimize the importance of other measures of safety, especially with respect to signalling. He pronounced the steel car past the experimental stage, said the cost is not of sufficient importance to prevent its use and declared that railroads in retiring old rolling stock should replace it with steel cars.

It was the personal opinion of Mr. Sague that the question of steel cars is a minor issue just at present because of what he called the lack of adequate discussion of the subject, which he said could not be had until the matter of signals, safety appliances and other questions had been taken up more comprehensively. He sounded a warning against high speed of trains, and said the reduction of the speed by various railroads had, in his estimation, decreased accidents 50 per cent. Reference was made to the rapid rate of introduction of steel cars and the fast disappearing wooden cars and it was said the question arises as to whether legislation on the subject should be framed to force a certain minimum of general construction with a view to compelling railroads which have been backward in the matter of replacing wooden cars with steel cars to change their policy.

Statistics showing the approximate cost of replacement of wooden cars by steel estimated by railroads were shown as follows:

| | Number | Average Cost | Amount |
|---|---|---|---|
| Postal | 680 | $11,000 | $ 7,480,000 |
| Mail and baggage | 2,724 | 10,000 | 27 240,000 |
| Mail, b'g'e, pass. | 679 | 10,000 | 6,790,000 |
| Baggage and pass. | 3,757 | 10,000 | 37,570,000 |
| Baggage, express | 7,431 | 8 500 | 63,163,500 |
| Passenger | 23,692 | 12,800 | 303,257,600 |
| Parlor, sl'p'g, d'ng | 6,846 | 22 000 | 151,008,000 |
| Business | 774 | 15,000 | 11,610,000 |
| Motor | 325 | 20,000 | 6,500 000 |
| Total | 46,926 | | $614,619,100 |
| Annual interest chg'd at 5 per cent | | | $ 30,730,955 |

Figures showing the number of cars of the various kinds in use, those under construction and similar data, such as were given by THE IRON TRADE REVIEW in a recent report of the Interstate Commerce Commission, were incorporated in the committee's report.

Dealing with the rail question, the committee recommended a test of the relative quality of the European and American rail, it being pointed out that now is an opportune time in view of the fact that rails are on the free list.

The committee said it understood that one or two of the large railroad systems engaged in international service have imported considerable quantities of European rails and have used them where their service could be fairly compared with American rails, and that no improvement has been indicated by the comparison. The committee felt that there is no conclusive reason for believing that foreign rails average better in quality than those of American manufacture. Records of breakage, the committee reported, are not available for comparison and the conditions of service in Europe, owing to much lighter wheel weights, and other favorable conditions, all contribute to better rail service than is obtained here. The committee reported also that it had been advised by engineers who inspect rails both in this country and abroad those rails exported from this country for use in South America and elsewhere compare favorably with those of European manufacture both in wear and breakage.

The committee said that its final conclusions of last year may, at least as far as the rail question is concerned, be safely emphasized as follows:

"That present conditions do not require the inspection by the government of rails or legislation concerning specifications or inspection.

"The most effective governmental method of securing continued improvement in the rail situation is the careful and thorough investigation of all important accidents which may be caused by rail breakage.

"The government tests of rails and ingots which were begun a few years ago should be continued and special study should be given to rail steel made by the basic open-hearth process."

These tests, it was pointed out, have not yet led to any practical result. The subject is, however, being carefully considered by members of the leading engineering societies, the committee reported, with the hope that a definite program will be formulated to follow out this suggestion. The committee, in referring to criticism directed against steel manufacturers for the alleged sacrificing of quality to a larger production, said it must be acknowledged that the wheel weights now being used upon both cars and locomotives in the United States are so great as to be entirely without precedent in railroad history, and the combination of high speed and heavy wheel weights, together with the extremely severe track conditions frequently met in winter operation in this country, produce conditions which are most difficult to meet.

In reply to a question asked him, Mr. Sague said the committee had given only limited study to the matter of new alloys entering into rail manufacture, such as copper, but said he thought the direction of improvement lies in the bettering of the standard, whether of open-hearth or Bessemer make. He also digressed to refer to the report of a German expert who was in this country comparing the method of manufacture here with that in Germany. Mr. Sague said the important point suggested by the German expert was that the production in Germany was by the use of 50 or 60 per cent more rolls in bringing about the same reduction of the billet. Steel makers of this country, Mr. Sague said, ought to consider this, but he admitted that he did not know that it would increase the standard of the rails. The method would cost more, he said, but declared that would be nothing if it would reduce the fissures, and obviate the pipes and slag.

The matter of internal transverse

fissures, the committee reported, demands most careful consideration, especially in view of the fact that they appear to have developed more in open-hearth steel than in Bessemer, and there is consequently danger that such failures will increase with the use of open-hearth steel.

## Fabrication in Transit Case

Washington, Nov. 11.—Arguments in the fabrication in transit case, in which fabricators protested against the proposed increase in rate of from 1½c to 2½c per 100 pounds were made before the Interstate Commerce Commission last Wednesday. The railroads submitted revised figures acknowledging that switching and terminal costs previously offered in evidence were too high. The unit cost per hour for a one-way movement at Canton, O., was reduced from $7.54 to $6.90 and the "setting in" and detention figure was lowered from $17.84 to $10.39.

The carriers maintain that they are losing money on the present rate of 1½c per 100 pounds and that even with the increase granted it would not defray costs in some instances. The fabricators contended that the present rate is already the highest paid for the privileges granted and that an increase would drive some of the interior fabricators out of business.

## Panama Canal Equipment For Sale

The Isthmian Canal Commission will offer for sale soon the equipment used in the construction of the Panama canal, including the following: Rolling stock, excavating machinery, miscellaneous plants and miscellaneous equipment, locomotives, cars, steam shovels, cranes, unloaders, earth spreaders, pile drivers, concrete handling plants, pumps, rock crushers, etc. Further information relating to this equipment and catalogs listing same may be obtained upon application to the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C. F. C. Boggs, major, Corps of Engineers, U. S. A., general purchasing officer.

## Tribute to Mr. Swank

"James Moore Swank, Protectionist", is the subject of a biographical sketch in the bulletin of the National Association of Wool Manufacturers, by John Bruce McPherson. The article reviews the life and services of Mr. Swank, who was born July 12, 1832. It declares that "his fame is secure and his name will be cherished and revered wherever the triumphs of the American iron and steel industries of the past century are known and recorded".

**Receiver Appointed.** — George H. Hester, an attorney of New Albany, Ind., has been named receiver of the American Hame & Mfg. Co., of New Albany, which filed a voluntary petition in bankruptcy in Indianapolis recently. The company has $170,000 liabilities and assets of $200,000, according to the petition. It is likely that the business will be continued. A. T. Holzbog is vice president and general manager. George H. Holzbog, president of the company, is president of the recently organized Louisville Steel & Iron Co., and is interested in several other iron enterprises. These will not be affected by the failure of the other company, it is said.

The Tanner-Hower Mfg. Co., Akron, O., advises it is organized to manufacture gages for gasoline and other substances, metal stampings, mechanical dies, metal and wood patterns and general machine shop work. The plant of the Tanner Gauge Co., which is succeeded by the Tanner-Hower company, will be used. Officers are: President, Perry E. Tanner; vice president, M. Otis Hower; secretary, William T. Helfer; treasurer, A. W. Tanner.

A hearing will be held at Parkersburg, W. Va., Nov. 24, for the purpose of investigating the project to construct a bridge across the Ohio river at that point. The hearing has been called by the Board of U. S. Engineers. A company to build the bridge was recently organized.

The Ventilating Closet Seat Co., Wausau, Wis., advises it is not planning to erect a factory for the manufacture of its patented seat device. Officers are: President, Sam Livingston; vice president, A. H. Halden; treasurer, R. H. Genrich; secretary, A. C. Schmidt.

Application is to be made Nov. 24 to Governor Tener, of Pennsylvania, for the incorporation of the Pottstown Steel Co. The incorporators are Jesse R. Evans and John B. Evans, of Pottstown, and Sol S. Lenhart, of Reading.

## HEAVY TONNAGE

**For Elevated and Subway Work in New York Pending.**

New York, Nov. 12.—Practically 85,000 tons of steel, according to final estimates, will be required for eight sections of elevated and subway railroad work which are now pending as a part of the elaborate system of extended rapid transit facilities in New York City. All of this tonnage promises to reach the mills within the next few months.

The sections now pending are only a fractional part of the work that is yet to be offered for bids and for which detailed plans are now in the course of preparation by the city engineers. These remaining sections are expected to come out rapidly during the next few months.

Work upon the new system is now under construction for which approximately 100,000 tons of steel requirements have been placed with fabricators and the mills during the past year. The total steel requirement of the system complete is estimated at least 300,000 to 400,000 tons.

The sections of elevated and subway extensions which are now up for figures, giving the estimated steel tonnage required for each and the date when bids are taken, are as follows:

Section 3, Seventh avenue, Manhattan, 5,700 tons (subway), Nov. 10.

Section No. 5, Seventh avenue, Manhattan, 3,200 tons (subway), Nov. 12.

Section of Steinway tunnel, Queens, 4,600 tons (subway), Nov. 18.

Section No. 2, Fourth avenue line, Brooklyn (elevated), 27,000 tons, Nov. 21.

Section No. 2, White Plains line (elevated), Manhattan, 15,100 tons, Nov. 26.

Section No. 1, Jerome avenue line (elevated), Manhattan, 17,000 tons, Nov. 28.

Section No. 1 A, Southern boulevard line (elevated and subway), Manhattan, 5,500 tons, Dec. 1.

The award of Section No. 2 of the Seventh avenue line to the Thomas J. Buckley Engineering Co., the low bidder, has not yet been made. This section involves 6,500 tons.

A 6-ton shear to cut steel up to 6 inches in thickness, and a bundling press, have been added to the equipment of the Wolverine Brass Works, Grand Rapids, Mich.

Operations have been started at the plant of the Fort Smith Iron & Steel Co., Arkoma, Ark.

# MEN OF THE IRON TRADE

**C. E. BRODHEAD JR.** was recently appointed general manager of sales for the Scranton Bolt & Nut Co., Scranton, Pa.

**GEORGE I. FONDA** has been appointed head of the welfare and safety department of the Bethlehem Steel Co., with the title of safety engineer.

**ALFRED HERBSTER** has been appointed traveling car foreman of the Lake Shore railroad, with headquarters at Cleveland, succeeding W. J. Frey, promoted.

**DR. M. C. CHRISTIE,** associate professor of the Imperial College of Science, London, England, is making an investigation of the by-product coke oven industry in the United States.

**W. J. McDOWELL,** formerly connected with the General Vehicle Co., as electric truck salesman in Chicago, recently accepted a similar position with the General Motors Truck Co.

**LEO. G. SMITH,** who has been superintendent of the open-hearth works of the Prime Steel Co., Milwaukee, since March, 1912, has been made works manager of that plant and also of the company's crucible plant.

**F. W. FURKERT,** inspecting engineer of New Zealand, is in Canada in the course of a trip around the world. He will inspect irrigation and transportation systems and on his return will sail from Vaucouver.

**C. T. NEEDHAM,** of the iron and steel firm of John Needham & Sons, Manchester, England, and a member of the English parliament, recently arrived in this country, where he plans to visit a number of points.

**S. O. LIVINGSTON,** secretary and sales manager of the Wilmarth & Morman Co., manufacturer of grinding machines, Grand Rapids, Mich., recently sailed on the Olympic for an extended business tour through Europe.

**WALTER DEAKIN,** managing director of H. W. Ward & Co., Ltd., machine tool builders, Birmingham, England, recently arrived in this country, where he expects to spend about six weeks visiting American manufacturing plants.

**F. B. QUIGLEY,** superintendent of the blast furnace of the Carnegie Steel Co., at Niles, O., which has been blown out has been transfered to the Ohio Works of the company at Youngstown, as assistant to J. C. Barrett, superintendent of the Ohio furnaces.

**DR. THOMAS DARLINGTON,** secretary of the welfare committee of the American Iron and Steel Institute, was unsuccessful in his candidacy for president of the borough of Manhattan, New York City, on the Democratic ticket, at the election, Nov. 4. The successful candidate was Marcus M. Marks, the Fusion nominee.

**JAMES H. HERRON,** Cleveland, has resigned his office as general manager of the National Machine Tool Builders' Association, effective Jan. 1. Mr. Herron's business as a metallurgical engineer has grown to such proportions he feels he should devote all of his time to it. Charles E. Hildreth has been appointed to succeed him.

**JOHN W. RAPP,** who recently retired as president of the United States Metal Products Co., at College Point, L. I., is reported to be contemplating re-entering the manufacturing business in this line and of erecting a plant at College Point. Mr. Rapp is the pioneer in the manufacture of metal fireproofing forms for use in the interior of buildings.

**THADDERS BAILY,** president the Electric Furnace Co. of America, Alliance, O., read a paper on "The Electric Furnace for Reheating and Annealing, as Applied to Steel Foundry Practice", before members of the Pittsburgh Foundrymen's Association, following the regular monthly dinner of that society at the Fort Pitt hotel, Pittsburgh, Nov. 10.

**ANDREW CLARK,** superintendent of the open-hearth department of the Carnegie Steel Co. at the Farrell, Pa., works, has resigned and Ford Corll, superintendent of the same department at the Sharon works, has been selected to fill the vacancy. L. M. Tittsler has been appointed superintendent of the open-hearth department at the Sharon works.

**ROBERT QUAYLE** has been promoted from superintendent of motive power and machinery for the Chicago & Northwestern Railway Co. to be general superintendent of motive power and car departments, with headquarters in Chicago. He began work with the road in 1871 as machinist apprentice. He is succeeded by H. T. Bentley, formerly his assistant.

**JOHN F. ROBERTSON,** of the John F. Robertson Co., was elected president of the Pittsburgh Society of Steam Supplies Salesmen at a meeting at Duquesne hotel, Pittsburgh, Oct. 25. C. F. Overly, of the Pittsburgh Pneumatic Tool Co., was elected vice president; H. R. Starrett, the Standard Scale & Supply Co., secretary, and James H. Johnston, manufacturers' agent, was elected treasurer.

**RODOLFO A. BERCHT,** Hamburg, Germany, recently resigned his position as manager of the Hamburg branch of the Fairbanks Co., New York City, and has engaged in business for himself as direct European representative for American manufacturers. Mr. Brecht was connected with the Fairbanks Co. for 12 years, four years of which he spent at the London branch as manager of its foreign department, and eight years at the Hamburg branch, which he established.

## LOWER REVENUE

### And Higher Expenses of Large Steam Railroads.

Figures compiled by statisticians of the Interstate Commerce Commission showing the operating revenues and expenses of large steam roads for September, on hand with the Commission at 1 p. m., Nov. 6, denote generally a decline in revenues and an increase in expenses.

The reports, not having been scrutinized, are not final, and, after analysis, may call for modification. They pertain to roads whose operating revenues for the year ended June 30, 1913, were $1,000,000 or more and embrace 156 lines in the United States, 64 being for the eastern district, 33 for the southern district and 59 for the western district.

For the entire 156 carriers, having a mileage of 211,244.05 miles, the net revenue per mile was $404 for September of this year, as compared with $426 in September of last year, with a mileage of 209,038.48.

In the eastern district the 64 carriers, with a mileage of 52,356.89, made a net revenue per mile of $609, as compared with a net revenue per mile of $672 last year with a mileage of 52,071.04. In the southern district, with 33 carriers representing a mileage of 40,824.17, the net revonue per mile for September of this year was $263, as compared with $250 for September of 1912 with a mileage of 40,625.04. In the western district the 59 carriers represented, with a mileage of 118,062, made a net revenue per mile of $360, as compared with $378 for September of last year, with a mileage of 116,337.40.

For the three months ending with September the net on all the roads for a mileage of 211,153.02 was $1,132, while last year it was $1,214 for the same lines with a mileage of 208,797.32.

For the eastern district the net revenue per mile for the 64 carriers with a mileage of 52,335.98 was $1,829 for the three months of this year, as compared with $2,052 for the same carriers with a mileage of 52,068.60 last year. In the southern district for the three months of this year the net per mile for a mileage of 40,796.66 for the 33 lines was $707, as compared with $715 for the same carriers during the same period last year with a mileage of 40,610.69. In the southern district the 59 carriers with a mileage of 118,020.38 this year netted $969 per mile for the three months, and $1,014 for the corresponding months of last year with a mileage of 116,118.03. Comparative figures for September for 1912 and 1911 show the following:

Net revenue per mile for all roads: 1912, $1,235; 1911, $1,131; eastern district, 1912, $2,083; 1911, $1,923; southern district, 1912, $720; 1911, $772; western district, 1912, $1,002; 1911, $874.

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W. W. Butler, vice president of the Canadian Car & Foundry Co., is concerned in the flotation of a new car company to be known as the W. W. Butler Co., Ltd., which will be capitalized at $100,000.

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Fire Nov. 2 did damage of $20.000 to the millwrights repair shop, drafting room and test offices of the Jones & Laughlin Steel Co., Pittsburgh.

# NEW BUSINESS

In New York, reports from the machinery trade in general establish definitely that the month of October, from the standpoint of new business booked, ranked as one of the most satisfactory months of the year. The first week of November was characterized by a fair volume of orders, and were it not for the feeling of uncertainty as to the future, which prevails generally among machinery buyers and sellers, the outlook might be said to be fairly good. That there is much business pending does not seem to help much, as most of this is being held up "for developments". The only railroads buying in the east at present are the Pennsylvania and the New York Central, and these are placing only a few scattered orders. The Western Maryland, which bought some machinery in addition to that recently reported in THE IRON TRADE REVIEW, is now through buying. The Boston & Maine has held up action on all further requirements; the Erie has stated that it will hold up all buying indefinitely and the other roads seem to have adopted the same attitude. The eastern railroads appear to be awaiting action on their petition for higher freight rates and seem to desire, in the meantime, to make their position appear as poor as possible in the eyes of the Interstate Commerce Commission. Whether or not they are "playing politics" is a matter of conjecture, but the fact that the railroads are now curtailing buying as much as possible, coupled with the fact that more than 200 industries are dependent for their existence in whole or in part on the railroads, has an important bearing on the machinery business. The machinery trade, consequently, does not expect its business to be normal until it receives encouragement from the railroads. Another feature, which is not considered promising by machinery people, is the curtailment of buying on the part of automobile manufacturers. In addition to the companies which recently failed it is known that some other large automobile manufacturers are suffering from a financial stringency. Thus, while business at present is considerably better than during the summer, the outlook is regarded with a certain degree of uncertainty. Machinery people do not regard the situation pessimistically, however. Manufacturers' agents are working their territories very thoroughly and in this way are uncovering occasional buyers, and prospects for the future. There is an unusually active demand for second-hand machinery. The Treadwell Engineering Co. is in the market for a milling machine, a planer and several lathes and other machinery, and it announces that it will close for a portion of its requirements shortly. The Grand Trunk Pacific list, announced last week, is published elsewhere in this issue. Several New York houses say they will not submit bids, as the list specifies that prices must be quoted f. o. b. Prince Rupert, B. C. These interests refuse to quote in any other way than f. o. b. makers' works. The General Electric Co. has not yet closed for the machinery included on its two lists issued in October. The demand for American machinery from abroad continues very good. From Boston it is reported that demand last week was very active there.

Included in business now pending in the west are a good many railroad lists. In fact almost every railroad in the west and middle west has some business pending. Most important are the lists of the Washington & Oregon Navigation & Railroad Co. and the Morgan's Louisiana & Texas Railroad & Steamship Co., both subsidiaries of the Southern Pacific; the Union Pacific, the Chicago, Milwaukee & St. Paul, the Lake Shore and the Big Four. All of this business is being held up indefinitely.

In Pittsburgh, machine tool dealers express the opinion that the trade will not reflect activity until after the market for the unfinished lines becomes stronger. The usual number of inquiries for single tools are being received, but prospective buyers show no desire to close negotiations at an early date. Builders of heavy rolling mill equipment are working on orders taken earlier in the year, and recently have received a number of orders from mills that were unable to make improvements several months ago, when pressure for deliveries was heavy.

In Cincinnati, the machine tool trade shows no indications of improving, and is still very dull. Only one or two shops are operating at 65 per cent of their respective capacities, and the majority are hardly running above 50 per cent. It is now very evident that most of the prospective buyers are withholding sending out inquiries until the effect of the new tariff bill recently enacted by congress can be better determined. As a result of the small amount of business being done by the machine tool people, the foundries here are not being kept very busy either on old or new orders. Special machinery, which has been the best seller in this market for some time, has fallen off considerably recently, but manufacturers are fairly busy on old contracts.

## ARKANSAS

RUSSELLVILLE.—The Russellville Water & Light Co. plans to purchase a 400-kilowatt 3-phase, 2,300-volt generator directly connected to engine. Arthur E. Hecker, manager.

RUSSELLVILLE.—The Russellville Water & Light Co. plans to erect steel towers to carry transmission lines across the Arkansas river, a span of 200 feet. Arthur E. Hecker, manager.

## CALIFORNIA

LOS ANGELES.—The Mathie Brewing Co. recently awarded contracts for the erection of its addition estimated to cost $25,000. The steel work will be let separately.

LOS ANGELES.—The Angeles Telephone & Telegraph Co. plans to erect a $40,000 brick building here.

SAN FRANCISCO.—The board of public works plans to erect a two-story brick and concrete building for Engine Co. 12, bids for which will be called for soon. Estimated cost about $50,000.

SAN FRANCISCO.—The Pacific Telephone & Telegraph Co. plans to erect a two-story brick building estimated to cost about $27,500, contract for which was recently awarded to Matthies & Griffith.

## COLORADO

DENVER.—Herbert Crocker has been engaged to prepare plans for the West Colfax-

Lorimer street viaduct estimated to cost about $800,000.

## DISTRICT OF COLUMBIA

WASHINGTON.—Bids will be received at office of general purchasing officer, Isthmian Canal Commission, Nov. 22, for transformers, switchboards, motor generator sets, wire and cable, conduit, etc. (Circular No. 806.)

WASHINGTON.—Bids will be received until Nov. 29 by H. R. Stanford, chief of the Bureau of Yards and Docks, United States navy department, for constructing a reinforced concrete sea wall at the navy yard, Norfolk, Va.

WASHINGTON.—Sealed proposals will be received at the office of O. Wenderoth, supervising architect, treasury department, until Dec. 8 for the construction complete, including mechanical equipment of the United States post office at Mishawaka, Ind.

WASHINGTON.—Bids will be received by O. Wenderoth, supervising architect, treasury department, for the construction complete, of the United States post offices at the following places, on dates given: Pocatello, Ida., Dec. 11; Duquoin, Ill., Dec. 19; Morristown, Tenn., Dec. 10.

WASHINGTON.—Bids will be received by R. V. La Dow, superintendent of prisons, department of justice, for furnishing and delivering at the United States penitentiary at Leavenworth, Kans., the following supplies: Reinforcing material, roofing felt, cement, sheet copper and slating nails.

WASHINGTON.—Sealed proposals will be received at the office of O. Wenderoth, supervising architect, treasury department, until Dec. 11 for furnishing the mechanical equipment of the United States post office at Muskogee, Okla., and until Dec. 2 for the United States post office at Newport, Ark.

WASHINGTON.—Bids will be received until Nov. 24 at the office of the general purchasing agent of the Isthmian Canal Commission for brass tubing, bronze bars, babbitt metals, steel bars, steel cable, steel wire, rivets, bolts, washers, hammers, twist bits, blocks, etc. (Circular No. 807.)

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## FLORIDA

ST. AUGUSTINE.—The city council recently voted to construct a concrete bridge over the San Sebastian river here. Estimated cost $21,000.

## ILLINOIS

JOLIET.—The Joliet Oil Tractor Co. has been incorporated; $10,000; by Hugh J. Mitchell, T. C. Jungles and George H. McCracken.

PEKIN.—The county supervisors recently appointed a committee to receive plans and specifications for a new $250,000 court house.

## INDIANA

FORT WAYNE.—The Fisher Bros. Paper Co. proposes to erect a six-story reinforced concrete building estimated to cost about $100,000.

INDIANAPOLIS.—The Payne Die Casting Co. has been incorporated to manufacture die castings; $5,000; by Floyd E. Payne, M. M. House and John Le May.

MARION.—Marion Machine & Foundry Co. has bought the plant of the Central Machine & Foundry Co. Improvements include a new cupola.

## IOWA

MANNING.—The Independent Machine Co. has been incorporated; $15,000; by R. C. Stuedman, Andrew Boss and H. H. Derner.

NEWTON.—The Maytag Mfg. Co. plans to erect a four-story, 80 x 220-foot steel and mill construction factory building, estimated to cost about $50,000, contract for which was recently awarded by H. A. Maine Co., Waterloo, Ia.

## KENTUCKY

ANCHORAGE.—The town has voted to issue $25,000 of bonds for the purpose of establishing waterworks.

CARROLLTON. — Alternating current will be generated at the city lighting plant instead of direct, and equipment of the new type will be ordered shortly. James Gayle is mayor.

LOUISVILLE.—The board of public safety is considering installing an electric light plant at the city workhouse. Address Chairman R. C. Watkins.

LOUISVILLE.—The Hyman Pickle Co. suffered $20,000 loss by fire and will purchase equipment for its packing department, where most of the damage was done.

LOUISVILLE.—The C. Von Allmen Preserving Co. will build a factory early in the year and will be in the market for boilers and special machinery.

SOMERSET.—Beecher Smith is reported to be in the market for an elevator, and is asking for quotations on the equipment.

VARILLA.—The Kentucky Utilities Co., Lexington, has purchased a steam power plant for use in serving coal mines in the eastern part of the state and will enlarge its capacity.

## MARYLAND

BALTIMORE.—The West Construction Co. was recently awarded the contract for a six-story, 100 x 200-foot reinforced concrete warehouse to be erected by the Canton Co. Estimated cost about $175,000.

## MASSACHUSETTS

BOSTON.—The Federal Hardware & Electric Co. has been incorporated; $10,000; by John F. Chevalier, Stephen S. Grady, et al.

BOSTON.—The Amesbury Spring Co. has been incorporated; $200,000; by Watler E. Brownell, E. A. Sweeney and M. G. Murphy, Boston.

BOSTON.—The Randall-Miller Co. has been incorporated; machinery; $25,000; by A. W. Randall, L. L. Randall, John Miller, L. J. Spain and Robert Foss.

BOSTON.—The Standard Envelope Sealer Mfg. Co. has been incorporated; $50,000; by F. Charles Douet, Fred W. Storck, H. C. Hoskins, Boston.

LAWRENCE.—Bids will be received until Dec. 1 by the Central bridge commission of this city for the erection of a steel or reinforced concrete 670-foot bridge over the Merrimack river. John J. Donovan, chairman Central bridge commission, may be addressed.

SOUTHBRIDGE.—The E. L. Gay Machine Co. has been incorporated; $10,000; by Richard C. Anderson, Carl P. Svenson and B. A. Nystrom, Southbridge.

SPRINGFIELD.—The Springfield Brewery Co. plans to erect a four-story brick, steel and concrete plant estimated to cost about $65,000, plans for which are now being prepared by S. M. Green & Co.

WORCESTER.—The Lombard Machine Co. has been incorporated; machinery; $85,000; by V. P. Moran, J. J. Rae, Worcester.

## MICHIGAN

BARAGA.—The township board plans to construct a 75-foot steel bridge with concrete abutments over the west branch of the Sturgeon river.

BAY CITY.—The Michigan Central railroad plans to begin construction work soon on car shops and a new freight depot estimated to cost about $500,000. J. R. Decker, Bay City, division engineer.

CHELSEA.—The Motor Products Co., of Detroit, has engaged in business here with a capital of $100,000 common and $50,000 preferred stock, of which $85,000 has been subscribed.

DETROIT.—The Eclipse Welding & Cutting Works of Detroit has been incorporated with a capital of $1,500.

DETROIT. — The Sterling Detroit Motor Co. has engaged in business with a capital of $105,000 common and $205,000 preferred, all in property.

DETROIT.—The Detroit Drawn Steel Co. has engaged in the manufacture of cold drawn steel and metals, metal products and machinery. Capital $200,000 common and $100,000 preferred, all of which is paid in in property.

JACKSON.—The board of education plans to erect a high school estimated to cost about $200,000. George W. Scolfold, secretary.

## MINNESOTA

DULUTH.—The Duluth Cereal Co., recently incorporated with a capital of $200,000, plans to begin construction work soon on a factory here.

## MISSISSIPPI

MERIDEN. — The city plans to expend about $150,000 on its proposed new city hall.

## MISSOURI

KANSAS CITY. — The Southwest Milling Co. plans to rebuild its plant here which was damaged by fire.

KANSAS CITY.—The Kansas City Athletic Club plans to erect a club house here estimated to cost about $200,000.

ST. LOUIS.—The Simmons Mfg. Co. is preparing to erect a four-story factory building estimated to cost, including equipment, approximately $100,000.

## MONTANA

HELENA.—Plans are now under way for the Y. M. C. A. building to be erected here. Estimated cost $100,000.

## NEW JERSEY

OCEAN CITY. — Sealed proposals for the erection of the proposed city hall here will be received at the office of the city commissioners until Nov. 20. Plans and specifications

may be obtained upon application to Vivian M. Smith, Sheen building, Atlantic City, architect.

TRENTON.—The Trenton Shirt Mfg Co. is having plans prepared for a two-story brick and reinforced concrete addition.

TRENTON.—The contract for the armory at Red Bank for the New Jersey National Guard has been awarded George B. Wills, New York City, at $74,000.

TRENTON.—The Trenton city commissioners recently awarded a contract for a low-lift pumping apparatus at the new water filtration plant to A. Lee Grover, of Trenton, at $74,991. This calls for pumps of two types. The bid of the De Laval Steam Turbine Co. for both pumps was $89,500.

## NEW YORK

BUFFALO.—Bids will be received until Nov. 25 by the county supervisors for the reconstruction of the county jail at an estimated cost of about $150,000. A. G. Hinkley, clerk.

DUNKIRK.—The Motor & Mfg. Co. plans to erect a two-story, 57 x 88-foot and a one-story, 28 x 30-foot addition to its plant here, contract for which was recently awarded to the Meister Construction Co.

LEROY.—The Genesee Pure Food Co. will erect a two-story, 56 x 120-foot factory, plans for which are now being prepared by Otto Block, Rochester.

MALONE.—The New York Central railroad is reported planning to erect car repair shops at Malone Junction.

MANHATTAN.—L. C. Hirsch & Co., Inc., has been incorporated to manufacture embossed enamelled decorative metals; $100,000; by L. C. Hirsch, E. M. Hyams and W. Schwartz, New York City.

MANHATTAN.—The Wood-Nathan & Virkus Co., Inc., has been incorporated to manufacture Vitro-type machines and printing machinery; $175,000; by H. A. W. Wood, H. Nathan and J. S. Wright, New York City.

MECHANICSVILLE.—The water department plans to purchase a 3,000,000-gallon pump. Oscar C. Abel, superintendent.

OLEAN.—The Salisbury Ball Bearing Mfg. Co., of Jamestown, plans to erect a plant here for the manufacture of counter sunk ball and roller bearings. C. W. Salisbury, president.

SYRACUSE.—The Chase Motor Truck Co. plans to erect a plant here for the manufacture of gasoline tractor plows. Estimated cost $150,000. Edward A. Kingsbury, secretary.

## OHIO

ASHLAND.—The county recently voted on a $250,000 bond issue for erecting a new court house. J. E. Gongmer, county commissioner.

COLUMBUS.—The Columbus Athletic Club plans to erect a $500,000 club house here, a site for which was recently purchased on East Broad street.

DENISON.—Addition of 25 feet to width of Pan Handle shops of Pennsylvania Railway Co. is planned. Additional machinery will be needed.

EAST LIVERPOOL.—The James & M. Maher Chain Tongs & Wrench Mfg. Co. has been incorporated; $25,000; by James Maher, M. Maher, Thomas Terry, H. E. Pfaff, L. L. Campbell and George Wurzell.

ELYRIA.—Superior Metal Products Co. has let contract to Rinkson & Buttenbender for addition 41 x 48 feet, brick and steel.

LIMA.—City Engineer Guy Crayton recommends the use of steel in place of concrete for the proposed bridge over the Ottawa river. The council favored a concrete structure, but the cost amounted to $40,000, and the plans will be changed to steel in accordance with the engineer's recommendation.

TOLEDO.—It is given out here on apparent good authority that the General Metal Work Co., at present operating in Jersey City under the name of the Miller Metal Work Co., will transfer its business from that place to Toledo about the first of January. The concern manufactures the tabular parts of the automobile. The factory buildings to be occupied by the company are near East Broadway and adjacent to Navarre Park. The present buildings occupy 55,000 square feet and there is plenty of room to develop, as the factory plot includes 11 acres.

VAN WERT.—The France Stone Co. is installing electrical equipment in its Middle Point quarry, which is to be made the largest and best equipped in the middle west. The daily output will be 100 cars.

WAPAKONETA.—The Breese Motor Plow Co. has been incorporated; $100,000; by R. A. Breese, G. R. Morris, David Lerbach, S. B. Everett and J. A. Hartford.

## PENNSYLVANIA

BEAVER.—The Radium Heater Co. has been incorporated; $5,000; by C. F. Sarver, D. L. Morrow, Pittsburgh; W. M. Kirkland, Beaver; C. W. Stough, Washington, and C. F. Morrow, Wampum.

BEAVER FALLS.—The finished Specialty Machine Co., a subsidiary of the Union Drawn Steel Co., has completed plans for the erection of buildings to house pickling and annealing departments.

BUTLER.—The Standard Steel Car Co. is installing an 18-inch finishing mill and a combination 12 and 9-inch mill. Julian Kennedy, Pittsburgh, has been engaged as consulting engineer.

CHAMBERSBURG.—The Cumberland Valley railroad will erect a four-story brick office building here, contracts for which were recently awarded to Irwin & Leighton, Philadelphia.

EASTON.—A $90,000 building is to be erected for La Fayette college.

MARS.—The Temers Co., manufacturer of woven wire products, has practically completed the erection of its new plant at this city. The Pittsburgh office has been moved to Mars.

MT. CARMEL.—The Mt. Carmel & Northumberland Cigar Mfg. Co. is having plans prepared by Clayton Strausser for a four-story brick factory building estimated to cost about $30,000.

PITTSBURGH.—The Bartley Automatic Nut Co. has increased capital from $5,000 to $20,000.

PITTSBURGH.—The Western Theological Seminary plans to erect a 60 x 80-foot administration building to be two stories, of brick. Estimated cost, $125,000.

PITTSBURGH.—The Crucible Steel Co. of America is taking estimates on the installation of automatic stokers for the operation of four 300-horsepower Babcock & Wilcox boilers in the power house of the plant at Jersey City, N. J.

PITTSBURGH.—The Gage Coal & Coke Co., Park building, is erecting 35 additional bee hive coke ovens, which will double capacity, at its Barbour county, W. Va., mines.

PITTSBURGH.—The James Pierpoint Sons & Co. has been incorporated; iron and coke; $50,000; by R. W. Pierpoint, Pittsburgh; J. Reynolds Pierpoint and Amzi B. Crane, Philadelphia.

PITTSBURGH.—George J. Hagan & Co., Peoples Bank building, have received a contract for the installation of American underfeed stokers for the operation of furnace equipment at the plant of the Trumbull Steel Co., Warren, O., including six sheet and pair furnaces, six tin plate furnaces and eight double annealing furnaces.

PITTSBURGH.—The Carnegie Steel Co. has recently installed at the Charleroi Coal Works, Charleroi, Pa., what are said to be two of the largest mine locomotives ever built. They are of the Baldwin-Westinghouse Barsteel type, and each weighs 30 tons. Each locomotive consists of two separate units of 15 tons each, and can be used as such, if desired.

WINDBER.—The Pennsylvania Railroad Co. plans to erect a brick, stone and steel station here estimated to cost about $40,000. Alexander C. Shand, chief engineer, Philadelphia.

YORK.—The Pullman Metal Weather Strip Co. has been incorporated; $10,000; by C. L. Lutton, V. K. Keesey and J. M. Cramley, York.

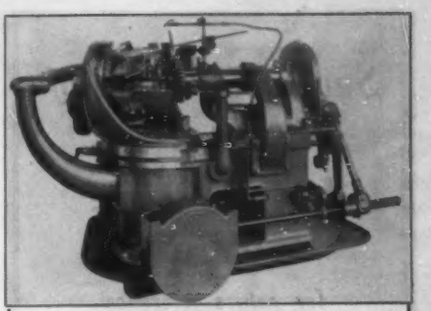
## SOUTH CAROLINA

ANDERSON.—The Bell Telephone Co. plans to erect a new building here estimated to cost about $90,000.

SPARTANBURG.—The Greenville, Spartanburg & Anderson railway of Greenville will erect a warehouse here, plans for which are now being prepared. Estimated cost about $40,000.

## TENNESSEE

BRISTOL.—Ferguson & Briscoe will need machine tools for the repair shop of an auto-

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**THE IRON TRADE REVIEW**

**CLEVELAND - OHIO**

mobile garage, the construction of which has been begun.

KNOXVILLE.—The Eli D. Miller Mfg. Co., Evansville, Ind., has purchased a furniture factory, which will be greatly enlarged.

KNOXVILLE.—The Knoxville Iron Co. is in the market for a radial drill with a 4-foot swing. It is rebuilding its machine shop, which was recently burned.

## TEXAS

FORT WORTH.—Enterprise Iron & Foundry Co. has been incorporated; $15,000; by W. H. Herrell, J. A. Herrell, J. A. Herrell Jr., Fort Worth.

SAN ANTONIO.—The Missouri, Kansas & Texas Railroad Co. plans to erect a passenger station and construct a line into this city at a cost of about $1,250,000. The company at present is using the station of the Southern Pacific railroad. S. B. Fisher, St. Louis, chief engineer.

SOMERVILLE. — The citizens recently voted in favor of a $20,000 bond issue for the construction of a water-works system.

TEXAS CITY.—A. L. DeGuire and associates of Dallas plan to erect a five-story fireproof hotel here estimated to cost about $100,000. Lang & Witchell, Dallas, architects.

TIOGA.—The citizens recently voted in favor of a $12,500 bond issue for the installation of a water-works system.

## WEST VIRGINIA

GRAFTON.—N. F. Kendall recently completed plans and specifications for a large foundry, which he proposed to erect here in the near future for a company just organizing with a capital of $50,000. The location is not yet decided upon, but will be in a few days. The building will be of steel and brick, estimated to cost about $40,000.

## WISCONSIN

ALTOONA.—At a special election a bond issue was adopted to provide funds for the construction of a steel bridge over Otter Creek between Altoona and Eau Claire city limits.

ASHLAND.—The county board of supervisors has commissioned a firm of Duluth (Minn.) architects to prepare plans for a new Ashland county courthouse, for which $100,000 has been appropriated. It will have a large steel dome.

BELOIT.—At the annual meeting of the Beloit Water, Gas & Electric Co., numerous improvements and extensions were ordered.

GREEN BAY. — The common council has decided to build a new steel draw bridge over Fox river at Main street in the spring of 1915, and will immediately repair the present bridge, part of which collapsed several days ago. The new bridge will contain a single leaf bascule, according to present plans, and the structure will cost about $175,000. A. Brauns is city engineer.

HARTFORD.—The county board of supervisors awarded a contract for a steel bridge over Rubicon river at Sumner street, Hartford, to the Worden-Allen Co., Milwaukee.

MANITOWOC. — The properties of the Manitowoc Light & Power Co. are about to be taken over and operated by the city of Manitowoc under municipal ownership. It is proposed to improve the plant.

MANITOWOC.—The Wisconsin Aluminum Foundry Co. of Manitowoc, is ready to start operations in its new plant, erected during the last few months at a cost of $65,000 on a site worth $5,000 donated by the Manitowoc Citizens' Association.

MILWAUKEE.—Machinists Supply Co., of Milwaukee, has been incorporated; $500; by Erna A. Schmidt, Karl Klauser, Herbert R. Manger, Milwaukee.

MILWAUKEE.—L. D. Fisher & Co., 228 Muskego avenue, dealers in scrap iron and steel and old metals, are entering the business of buying and selling second-hand machinery of all descriptions.

PORT WASHINGTON.—The Turner Mfg. Co., gasoline engines, has started the manufacture of small concrete and cement mixing machinery operated by gasoline engines and adapted for farm use.

RACINE.—The J. I. Case Threshing Machine Co. has leased a large part of the former Fish Bros. Wagon Co. works at Racine.

RACINE.—The Racine Motor Cars Co. has been incorporated; $25,000; by Eben Burroughs, Frank S. Swingle and Chris Slot, 1809 Asylum avenue.

# DOMINION OF CANADA

## BRITISH COLUMBIA

PRINCE RUPERT.—New dry dock at Prince Rupert will be electrically-operated. The Grand Trunk railway has awarded contract for electrical equipment to the Canadian General Electric Co., Ltd. Includes two 200-horsepower and four 100-horsepower variable speed induction motors with full automatic control for operating pumps. Power will be from two 1,250 kilowatt-ampere Curtis steam turbines. The exciters will be three 35-kilowatt turbine-driven generators and one motor generator set. The foundry, machine shop and ship yard will be equipped with 10 to 60-horsepower individual motors.

## ONTARIO

AURORA.—The town of Aurora has decided to install motor-driven turbine pumps for fire protection. Installation will include two four-stage, high lift, turbine pumps, Mather & Platt design, built by Canadian Allis-Chalmers, Ltd., each to deliver 400 imperial gallons per minute against a head of 325 feet, operating at 1,460 revolutions per minute. Will be direct connected at one end to alternating current motor and at other end to direct current motor. Electrical apparatus, including four-panel switchboard, will be built by Canadian General Electric Co., Ltd.

KINGSTON.—The citizens on Nov. 3 passed a by-law guaranteeing the bonds of the Kingston Iron & Tube Co. to the extent of $75,000.

ST. CATHARINE.—The citizens on Oct. 30 carried by-laws to secure a supply of power from the Hydro-Electric Commission, and to establish a distribution system at a cost of about $116,000.

TORONTO.—Preliminary work was commenced recently for the construction of the new union station of the Canadian Pacific Grand Trunk and the Canadian Northern railways, which is planned to be completed within three years. It will extend from Bay to York streets, having a frontage of 840 feet.

# TRADE CATALOGS

DRILL CHUCKS.—The Standard Tool Co., Cleveland, has issued a catalog describing its line of drill chucks.

BUSHINGS. — The Hyatt Roller Bearing Co., Newark, N. J., has published a bulletin describing its line of standard bushings.

ELECTRIC GRINDERS. — The Duntley electric grinder is described in a recent bulletin of the Chicago Pneumatic Tool Co., Chicago.

COMPRESSORS. — The Chicago Pneumatic Tool Co., Chicago, describes its line of power-driven compressors in a 30-page bulletin, recently issued.

GAS ENGINES.—The line of gas engines built by the Mesta Machine Co., Pittsburgh, is described in a bulletin issued by that company.

FURNACES. — The Murphy Iron Works, Detroit, has issued a 64-page catalog, setting forth the advantages of the Murphy automatic smokeless furnace. The catalog is illustrated with a number of views of the furnace in operation.